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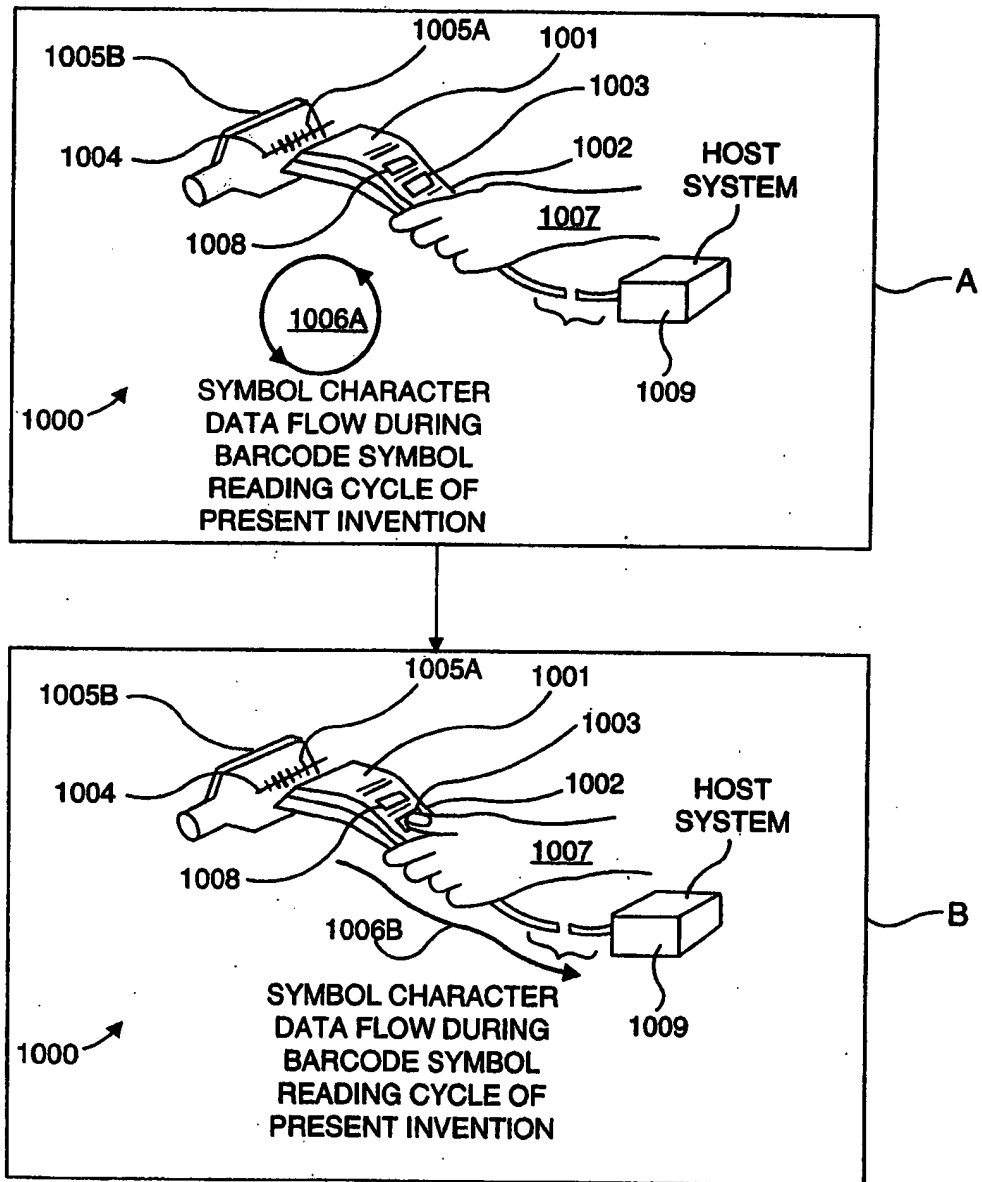


FIG. 1

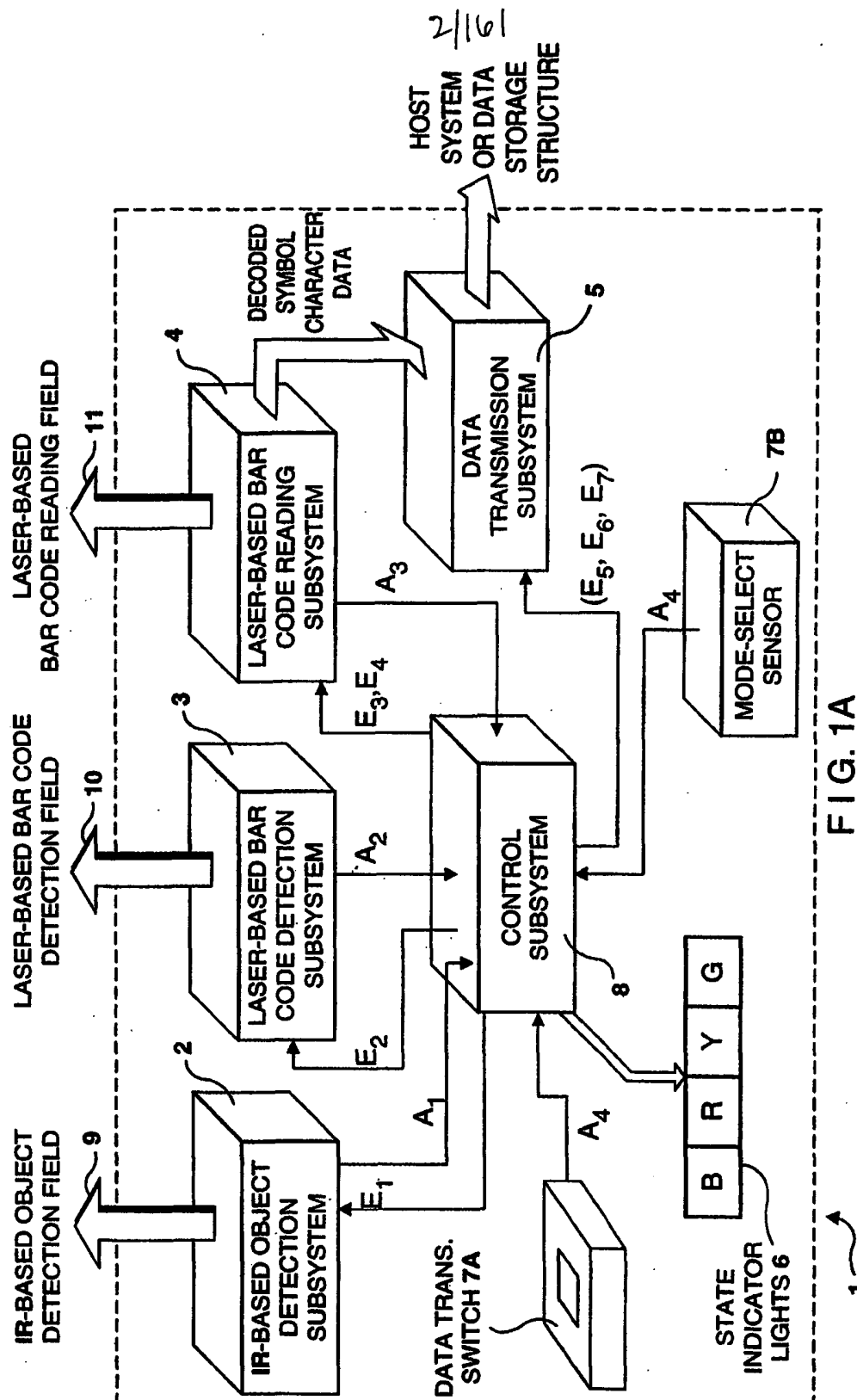


FIG. 1A

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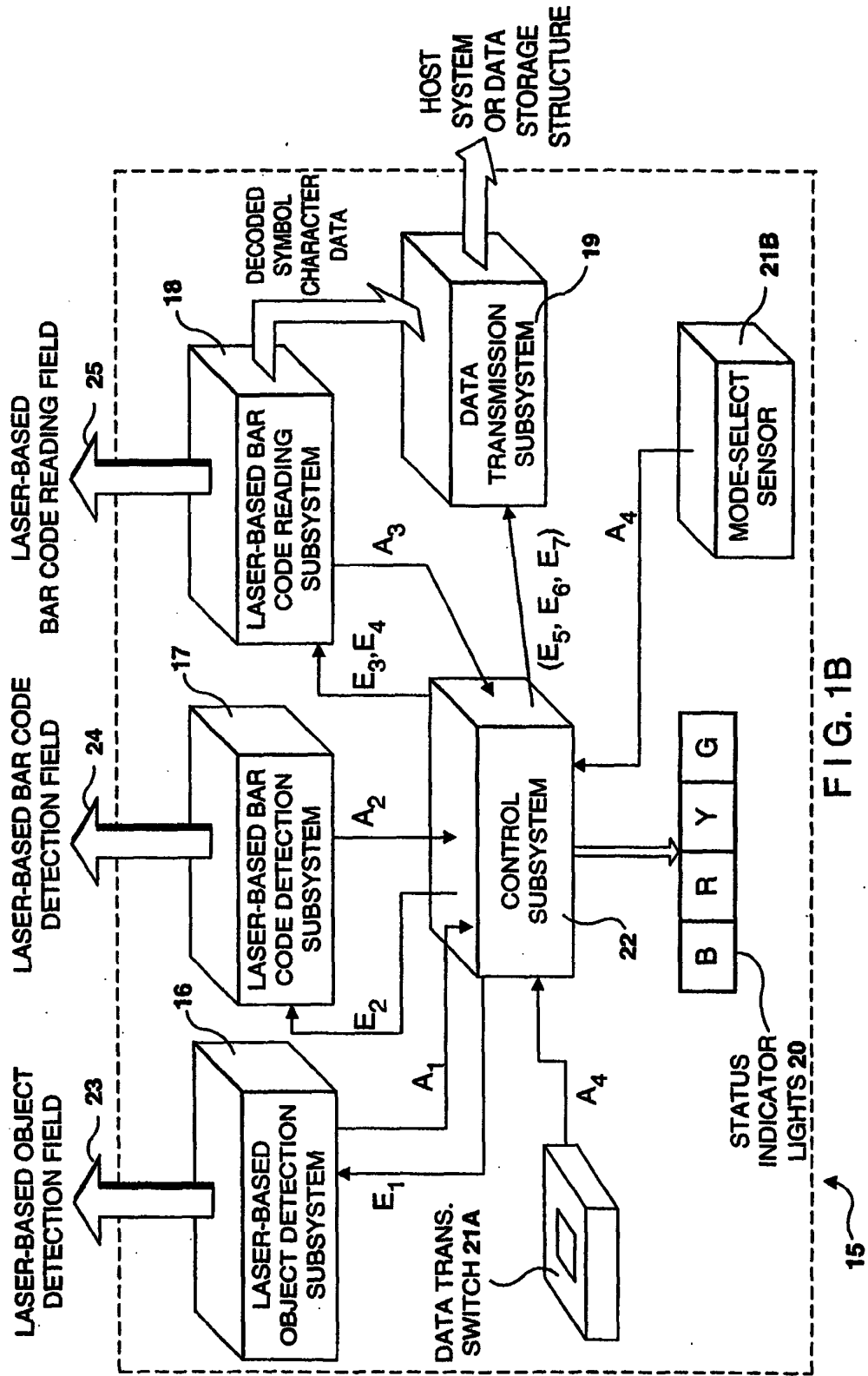


FIG. 1B

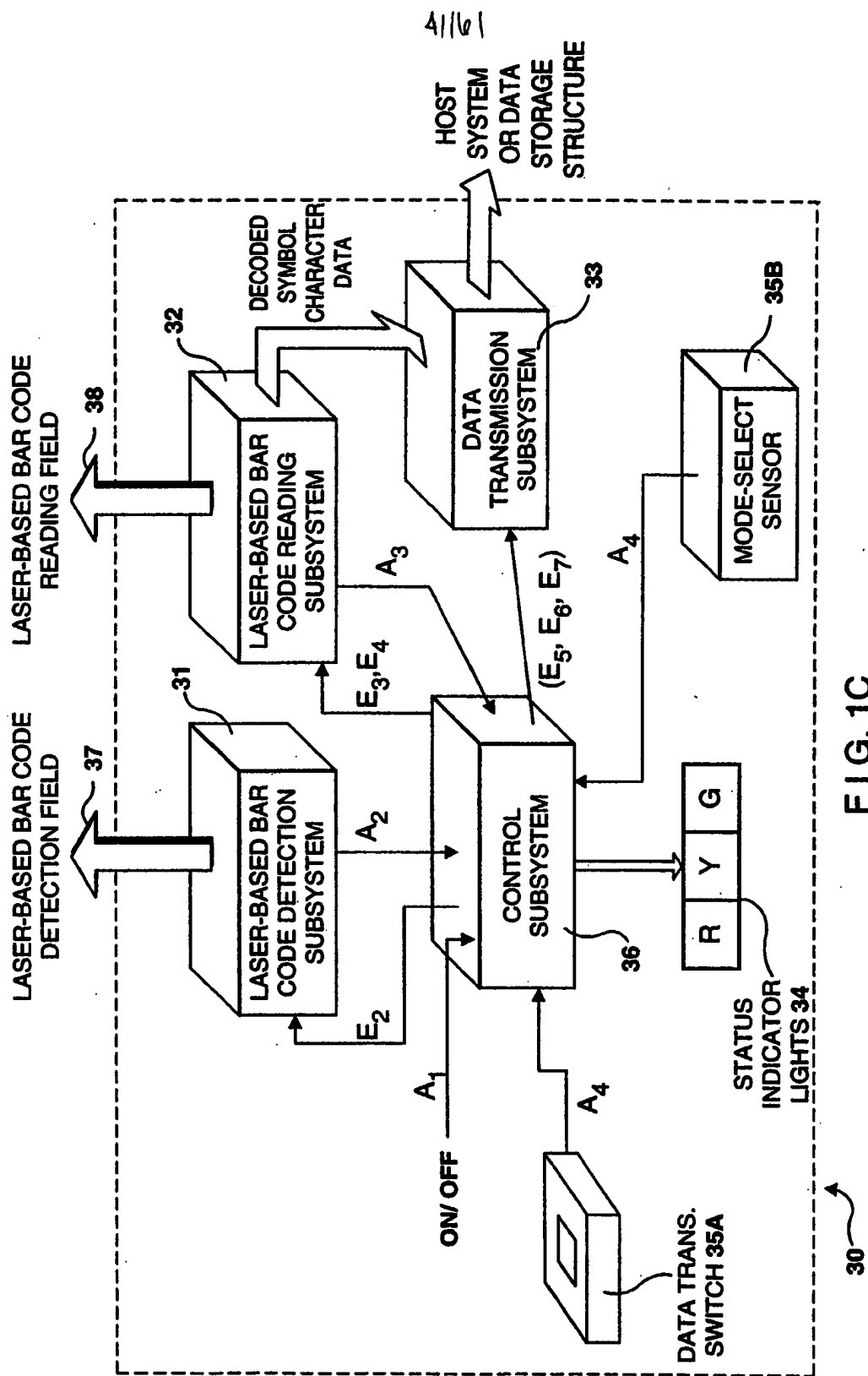


FIG. 1C

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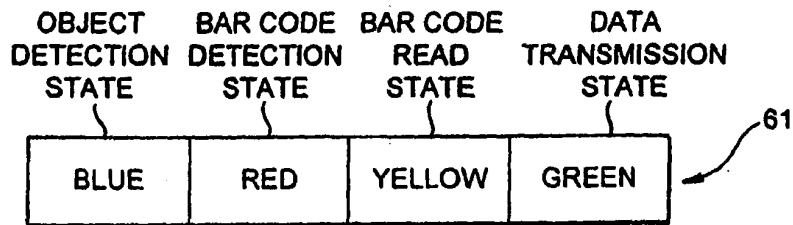
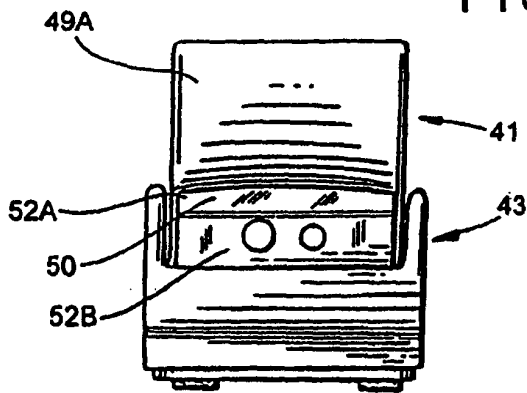
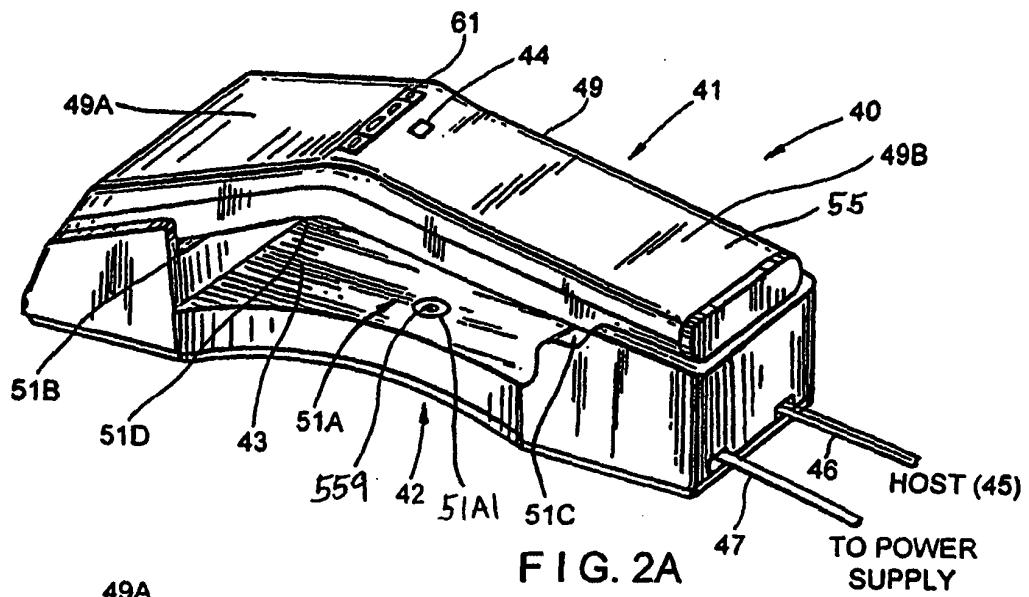


FIG. 2C

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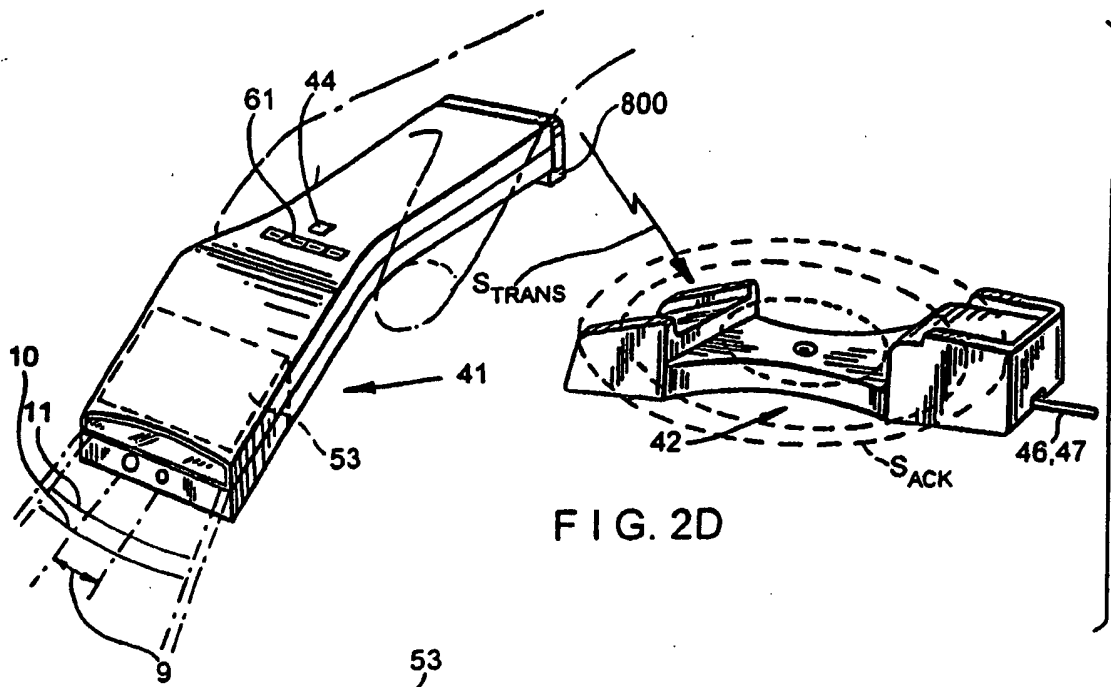


FIG. 2D

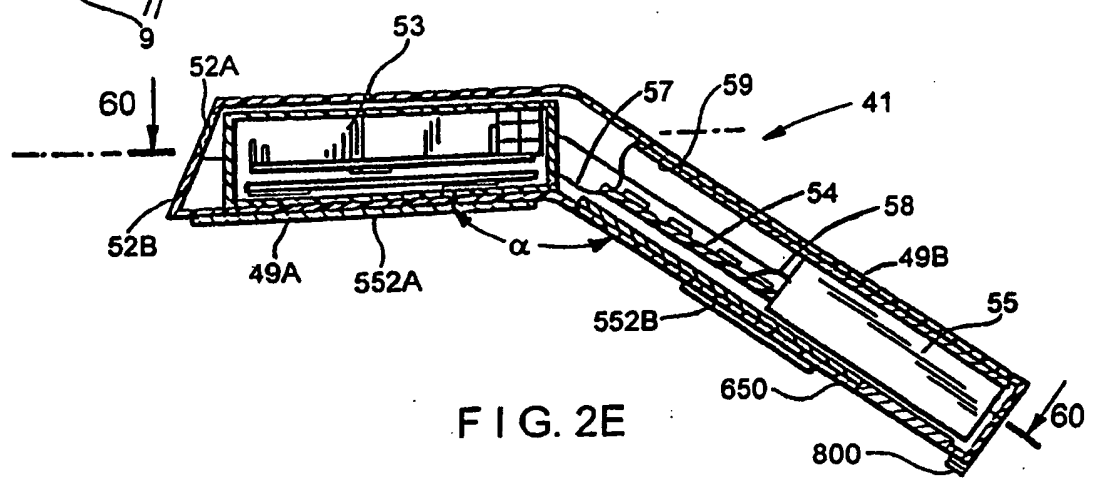


FIG. 2E

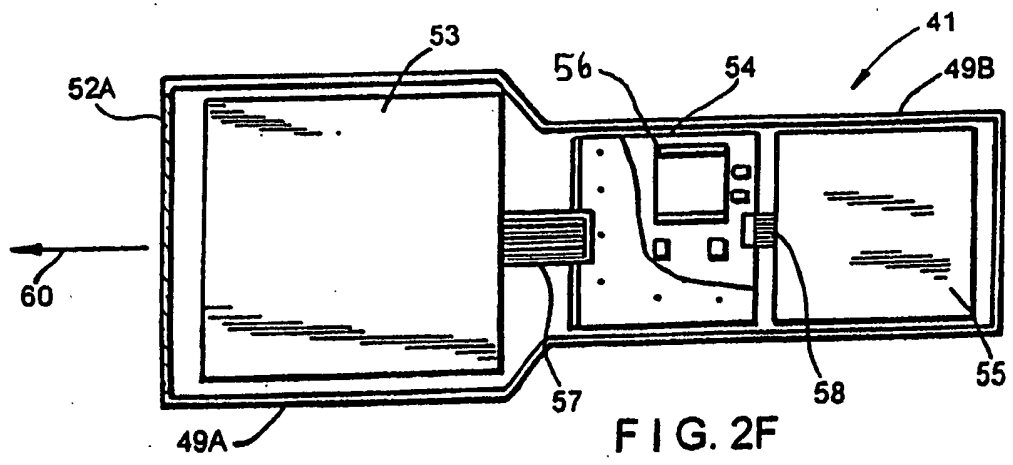
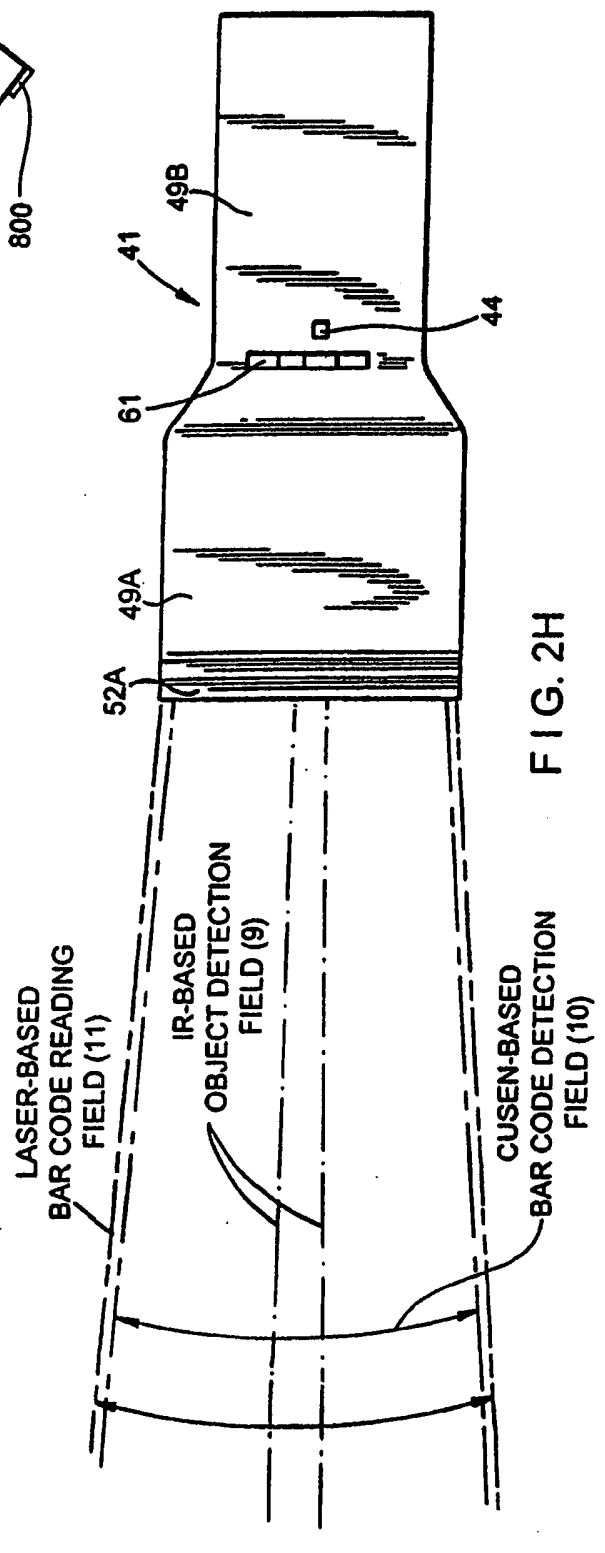
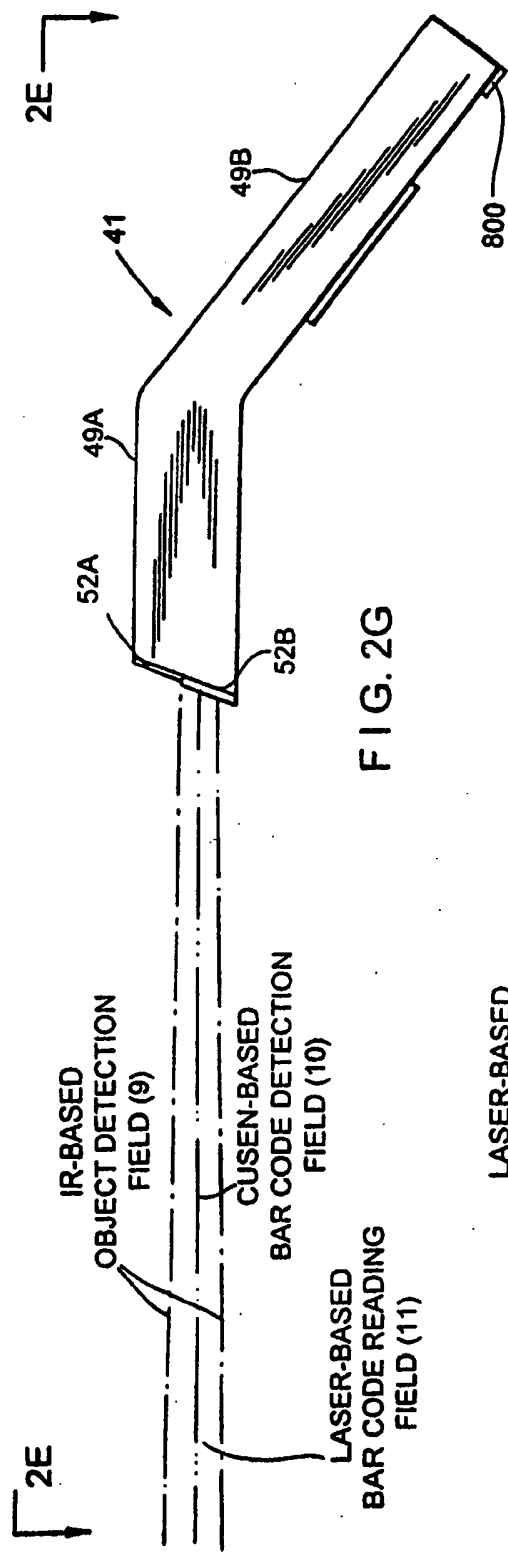
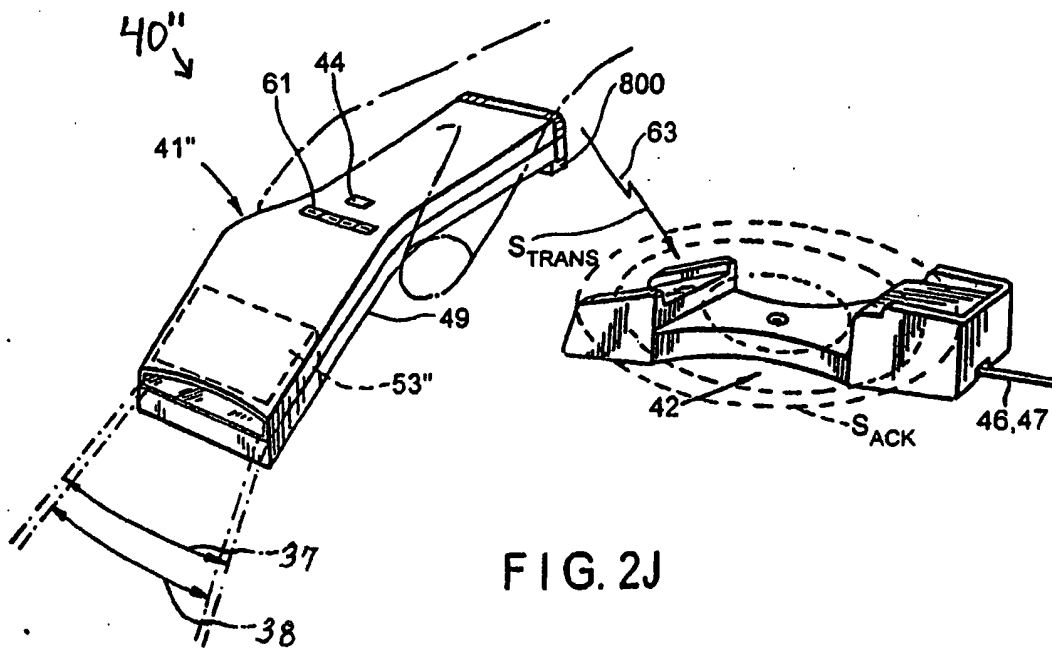
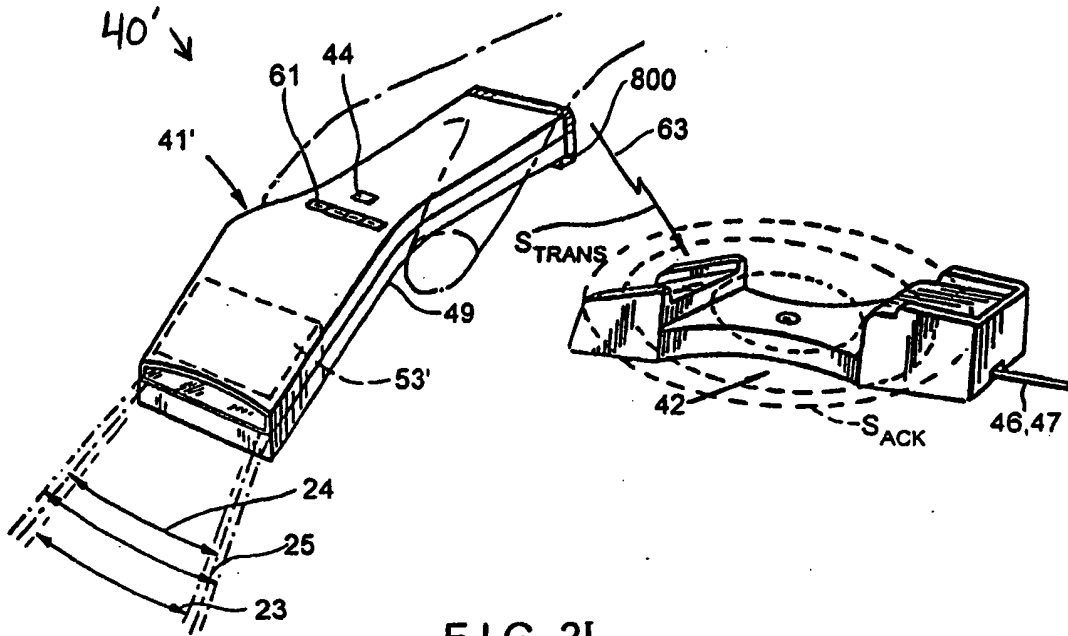


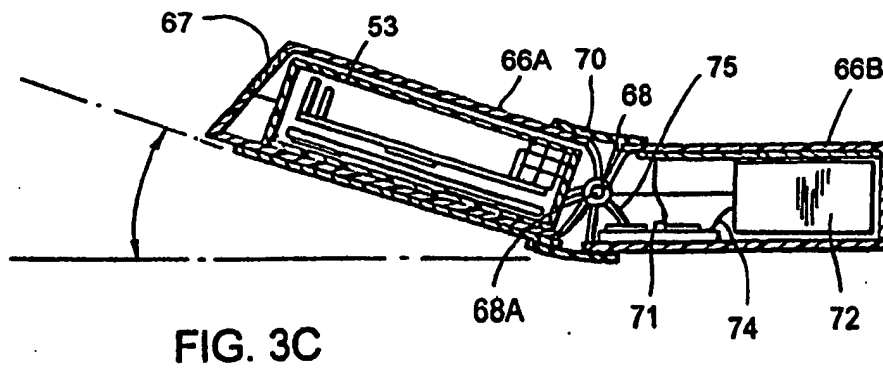
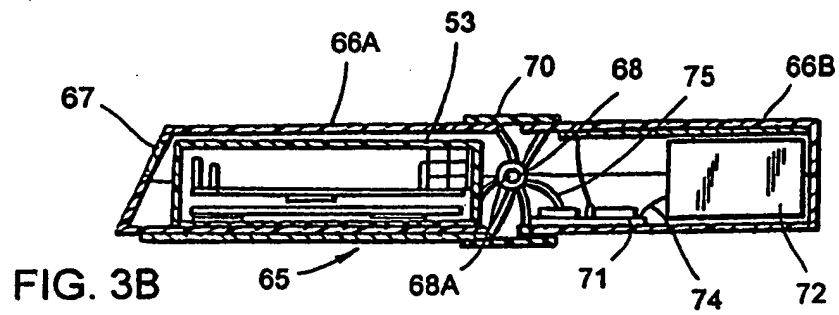
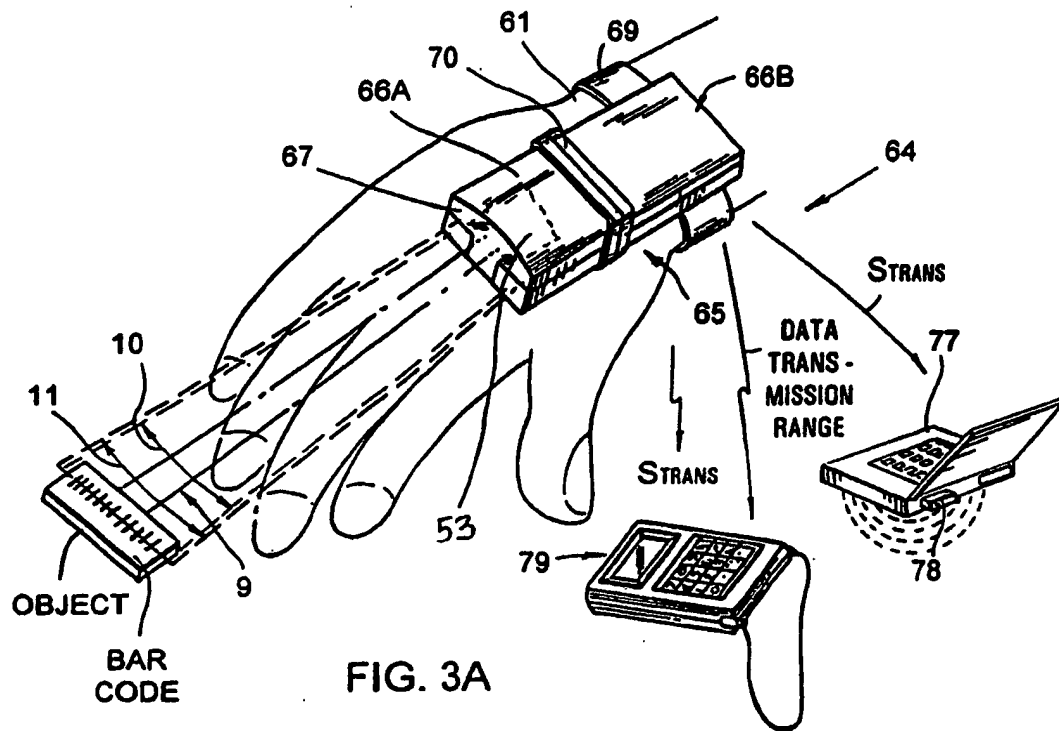
FIG. 2F



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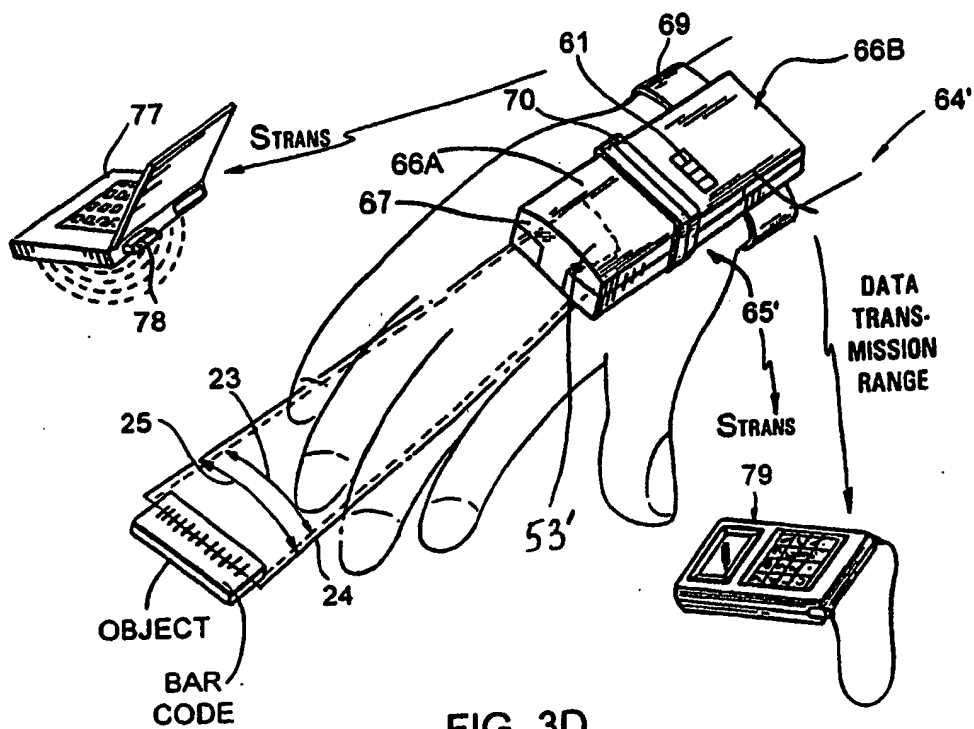


FIG. 3D

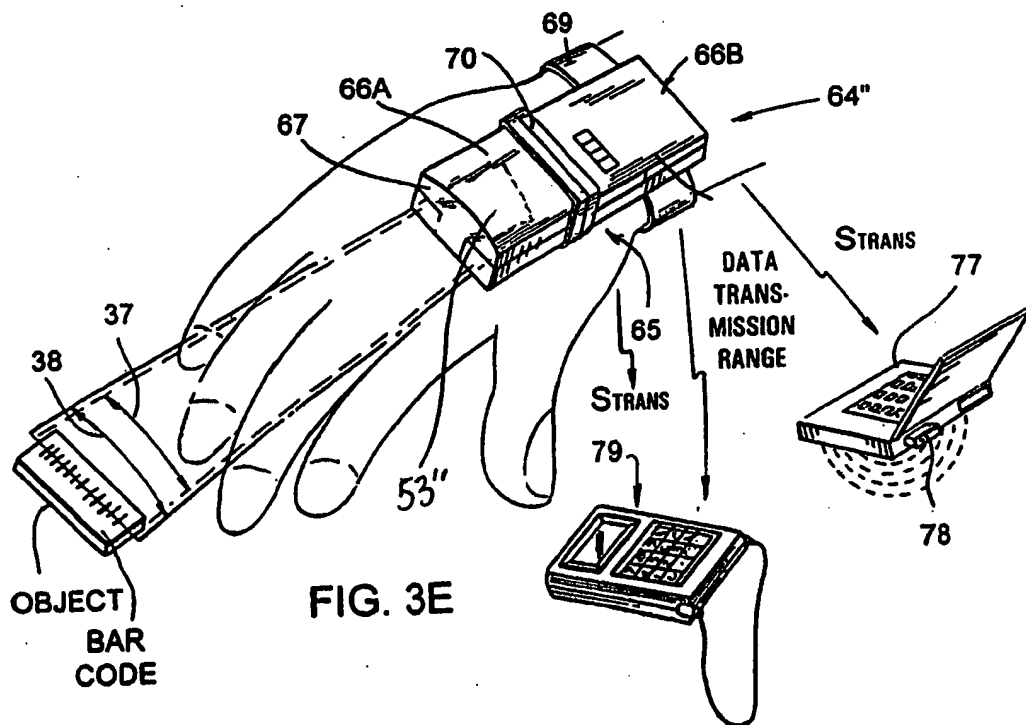


FIG. 3E

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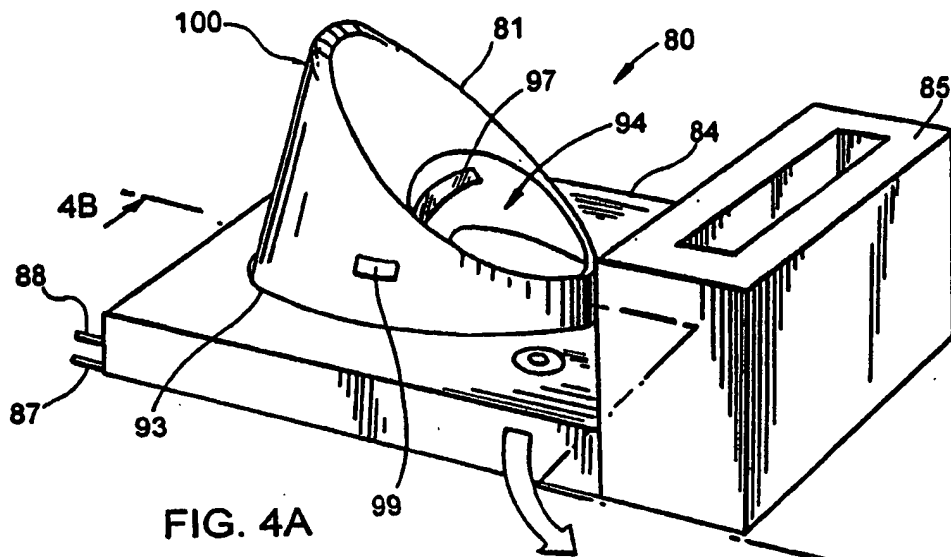


FIG. 4A

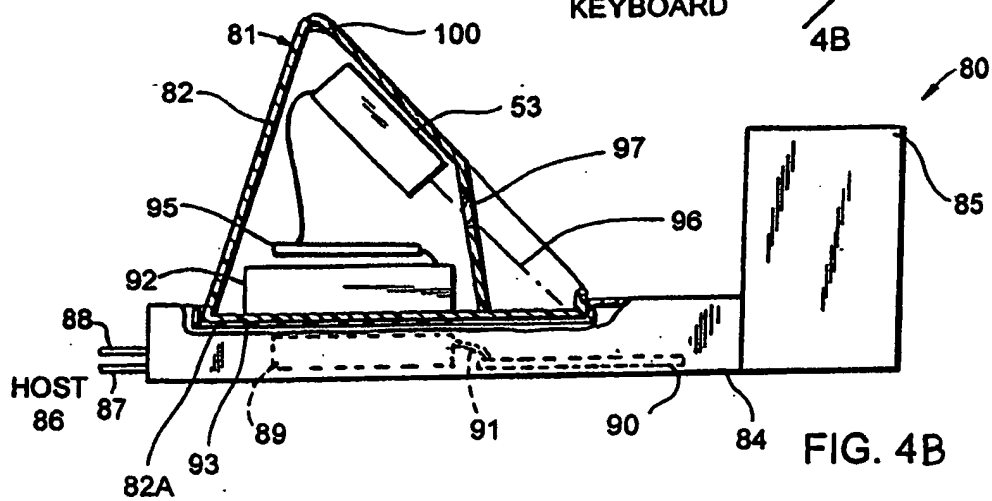


FIG. 4B

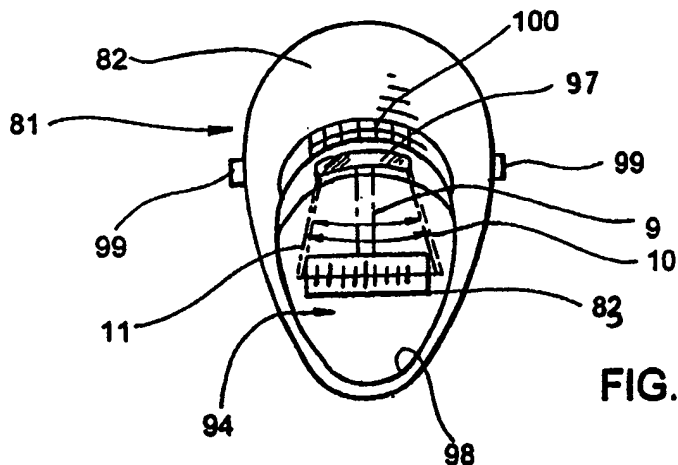
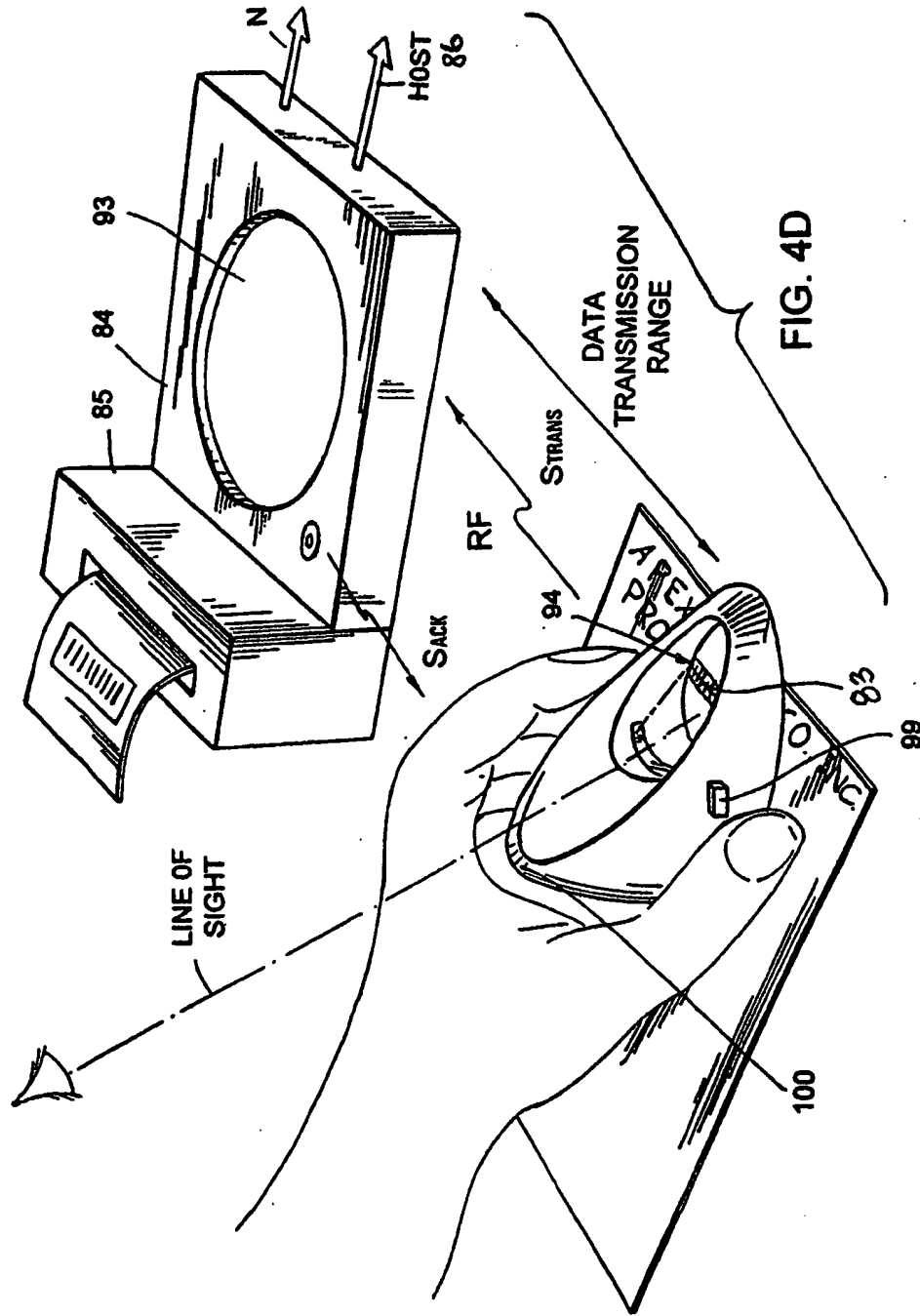


FIG. 4C

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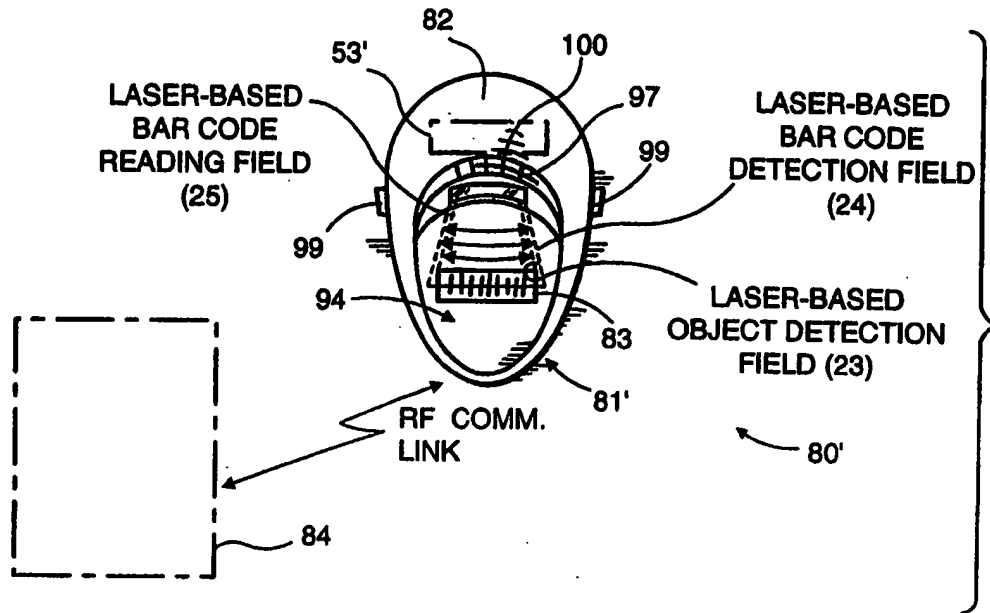


FIG. 4E

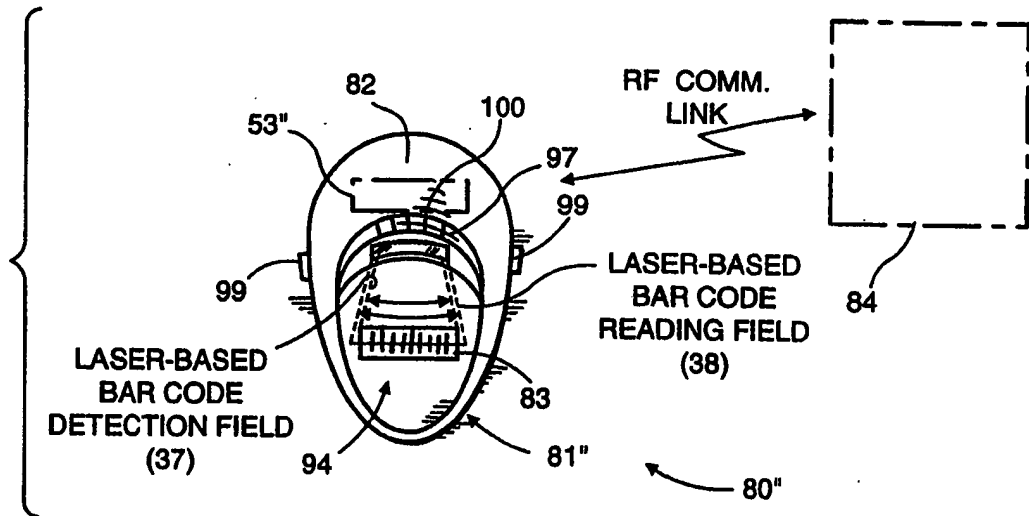


FIG. 4F

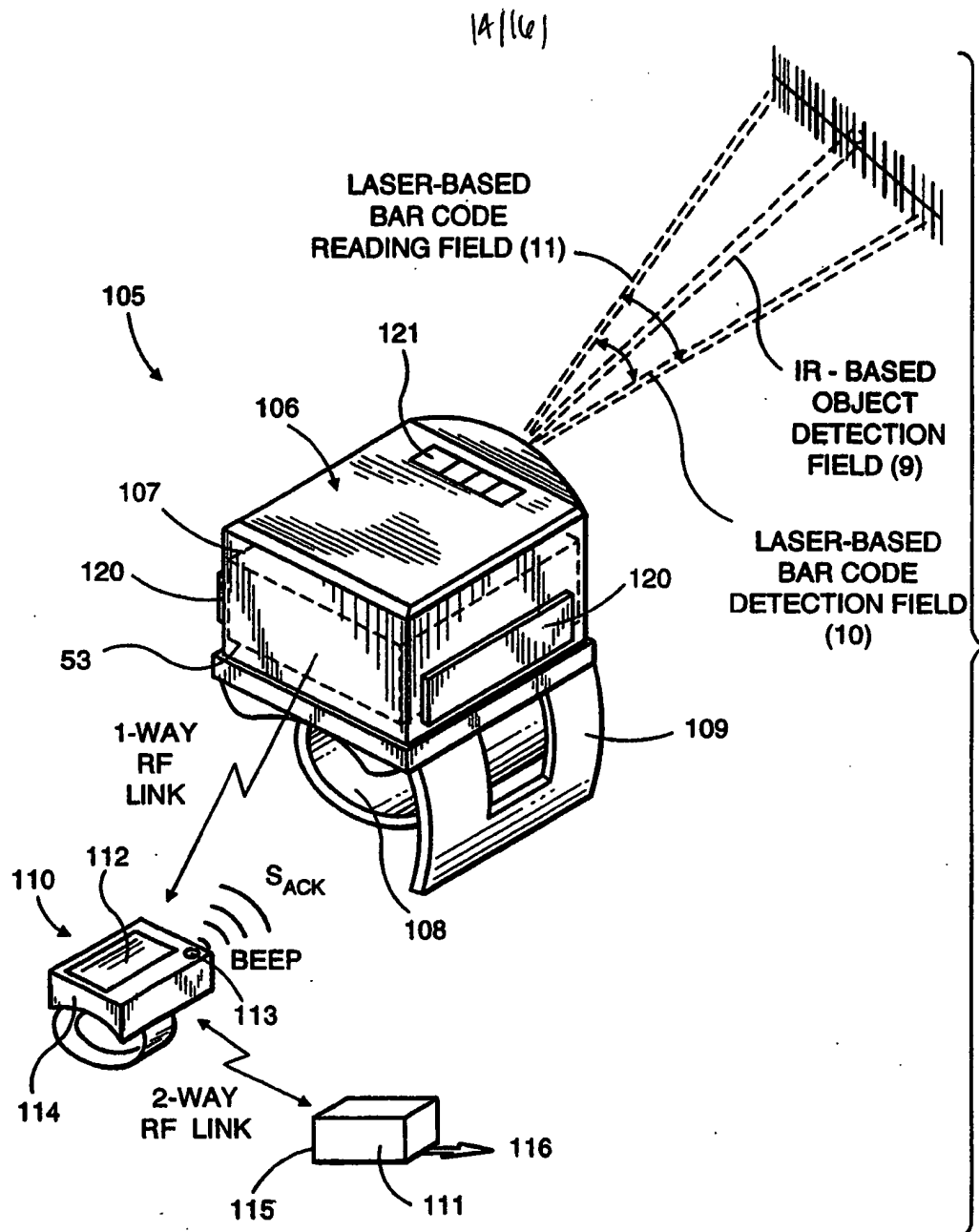


FIG. 5A

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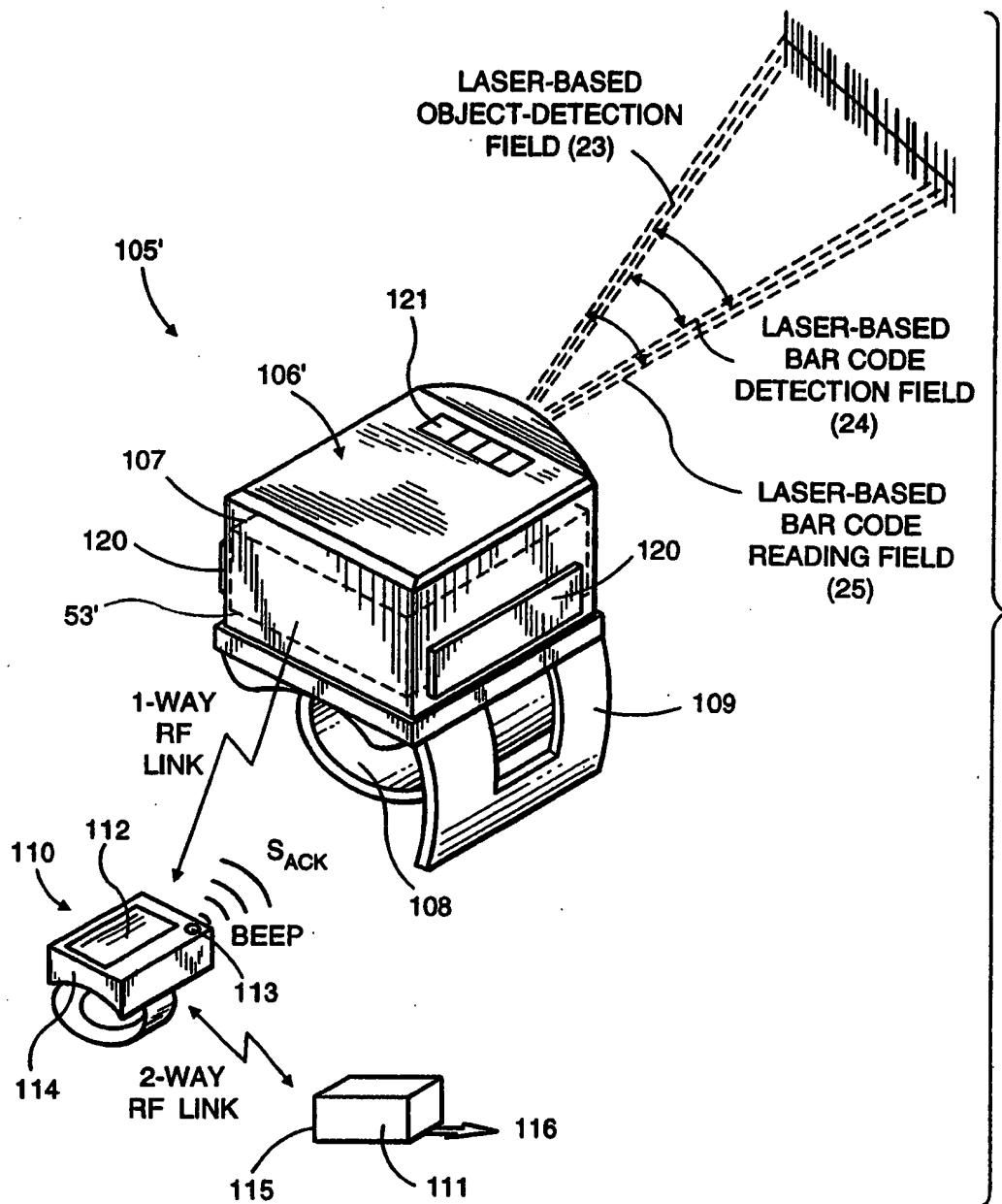


FIG. 5B

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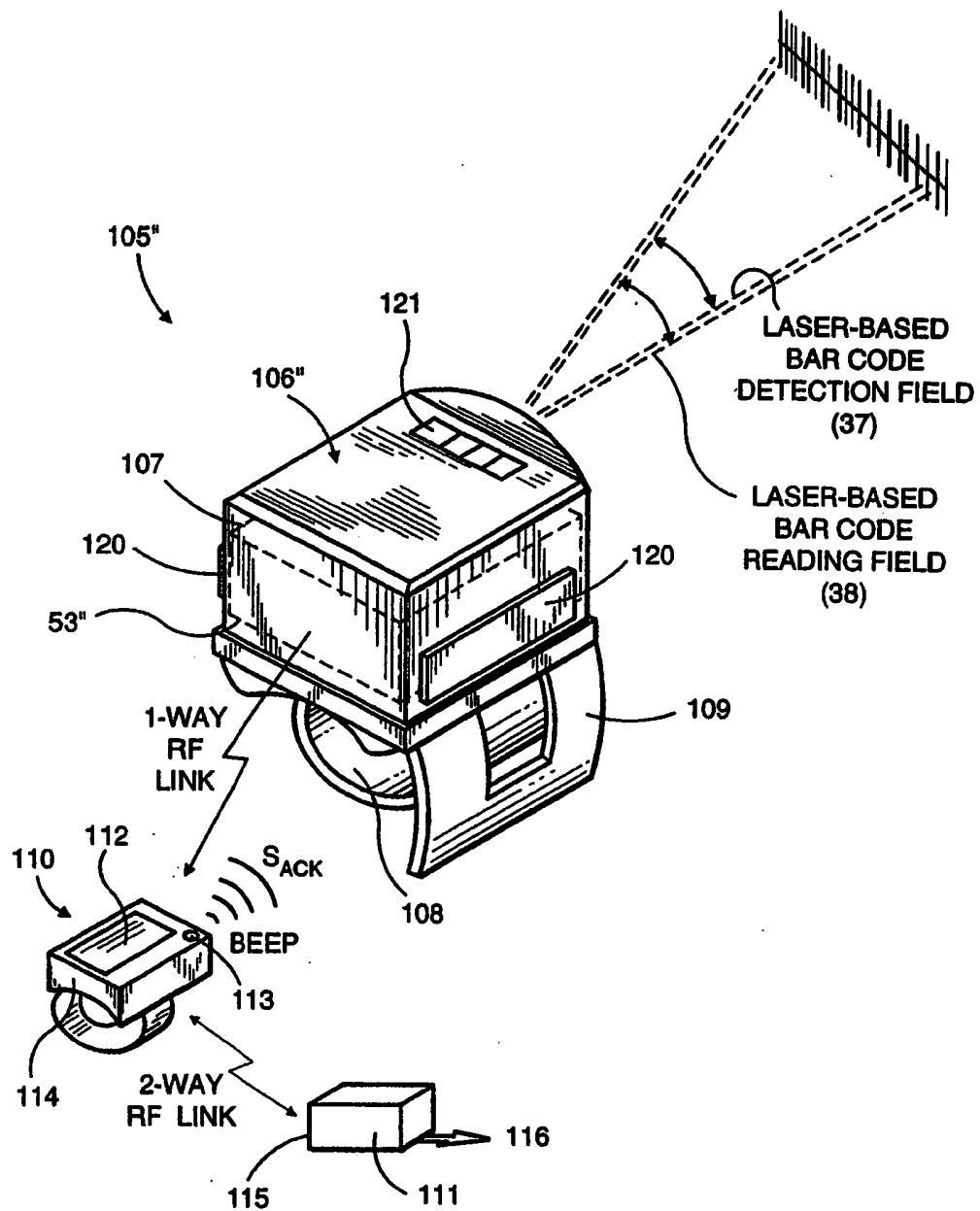


FIG. 5C

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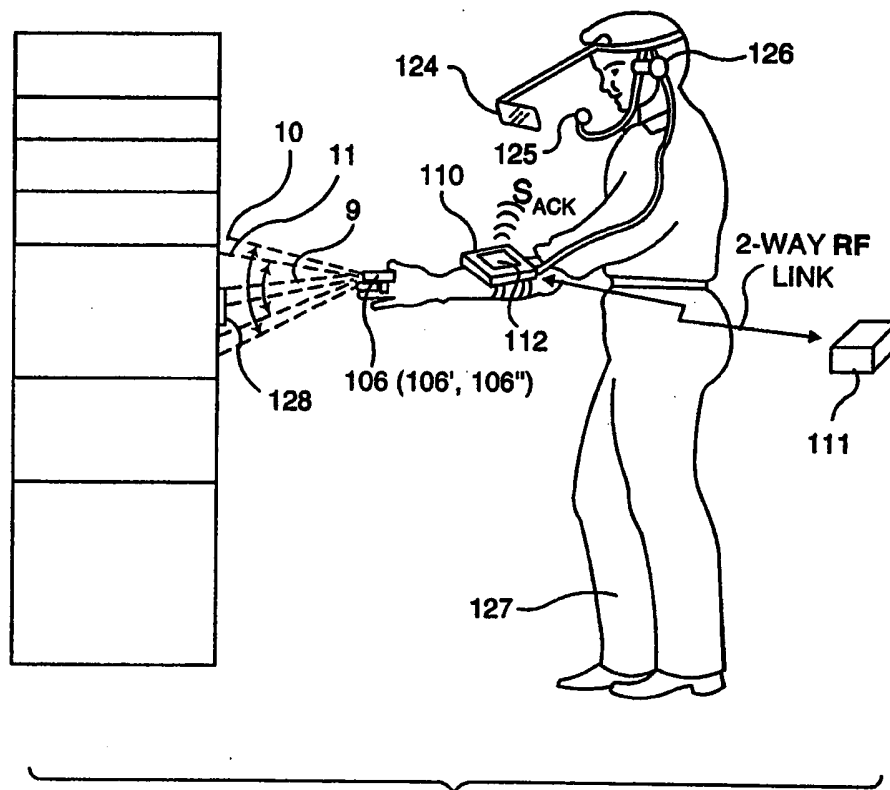
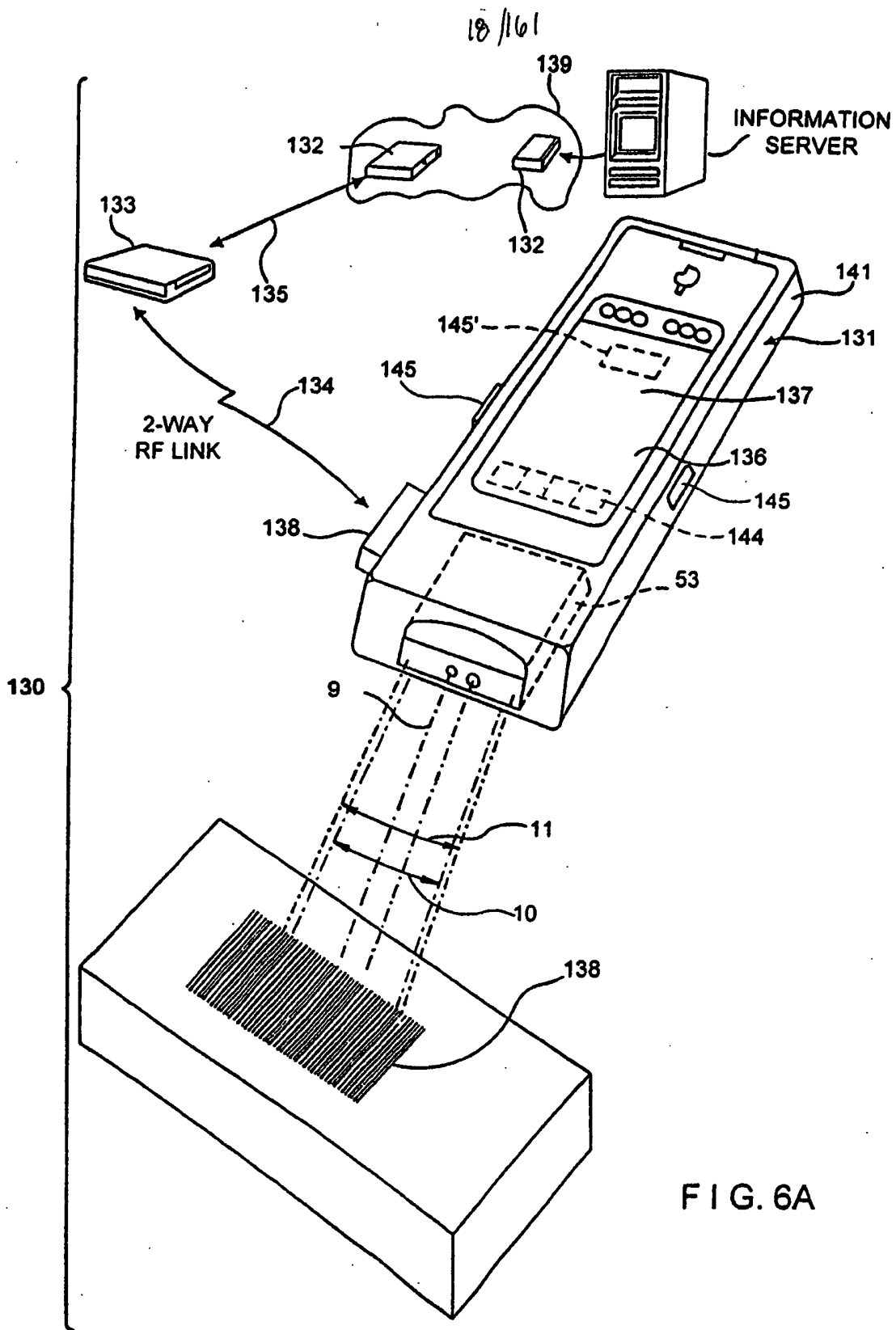
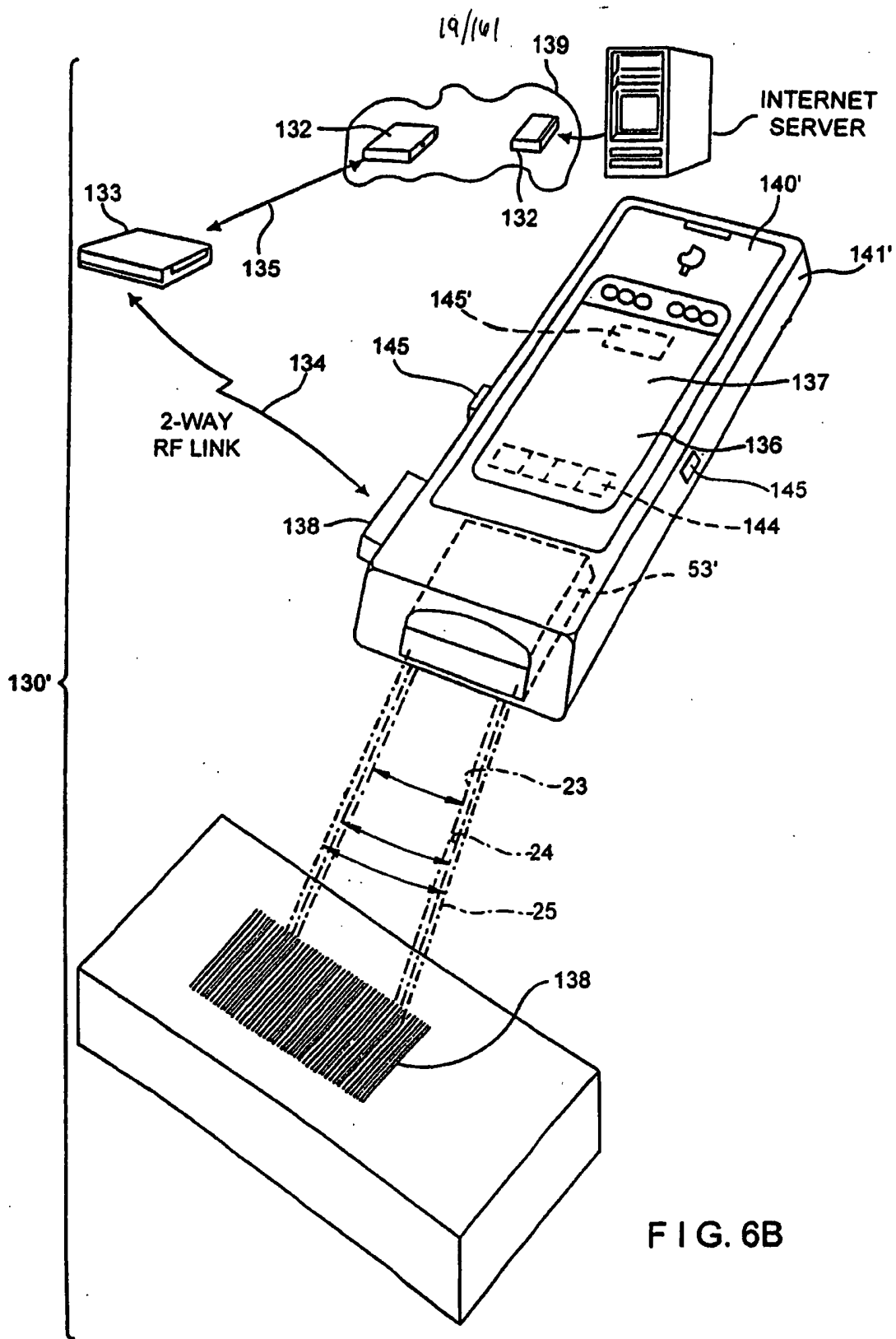


FIG. 5D





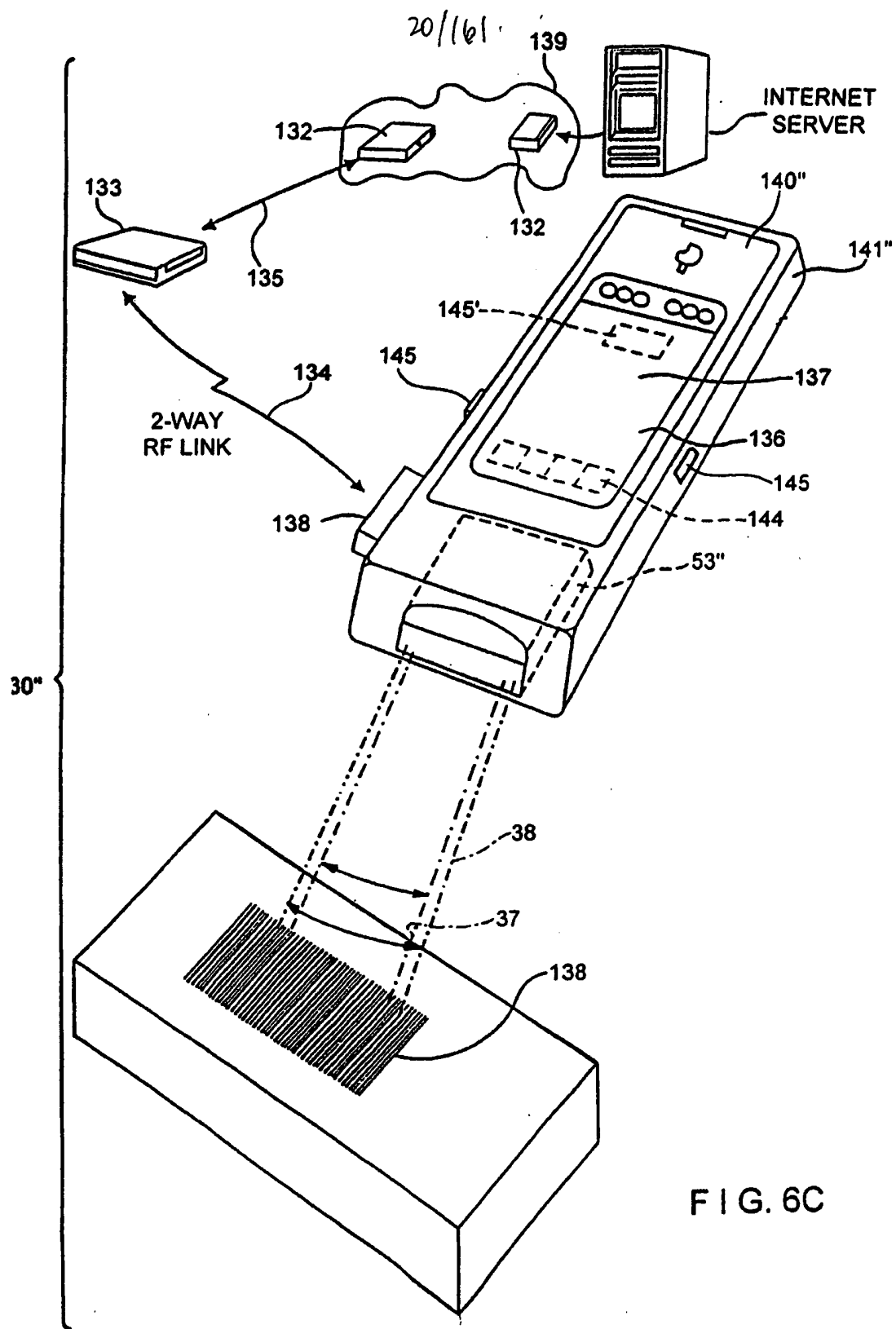


FIG. 6C

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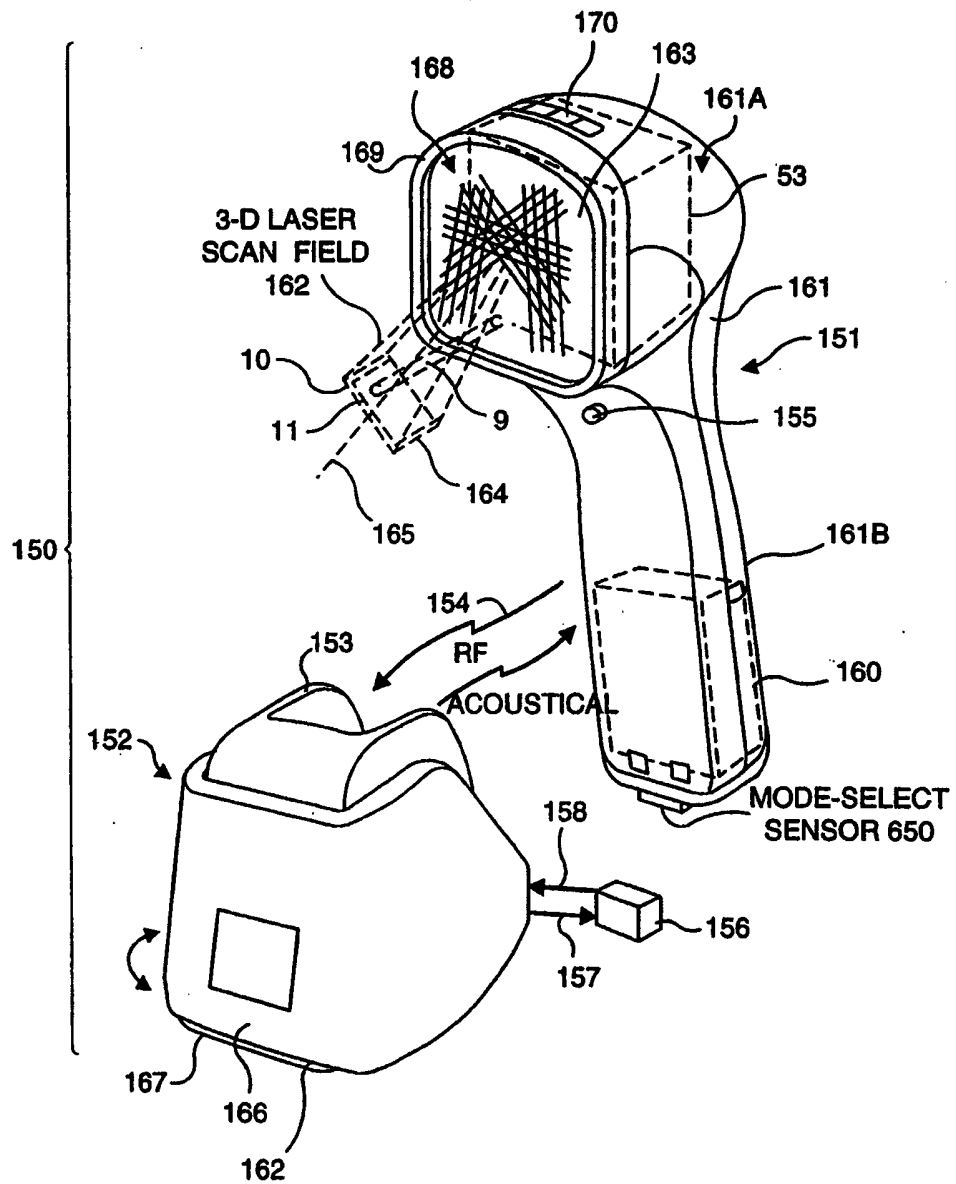


FIG. 7A

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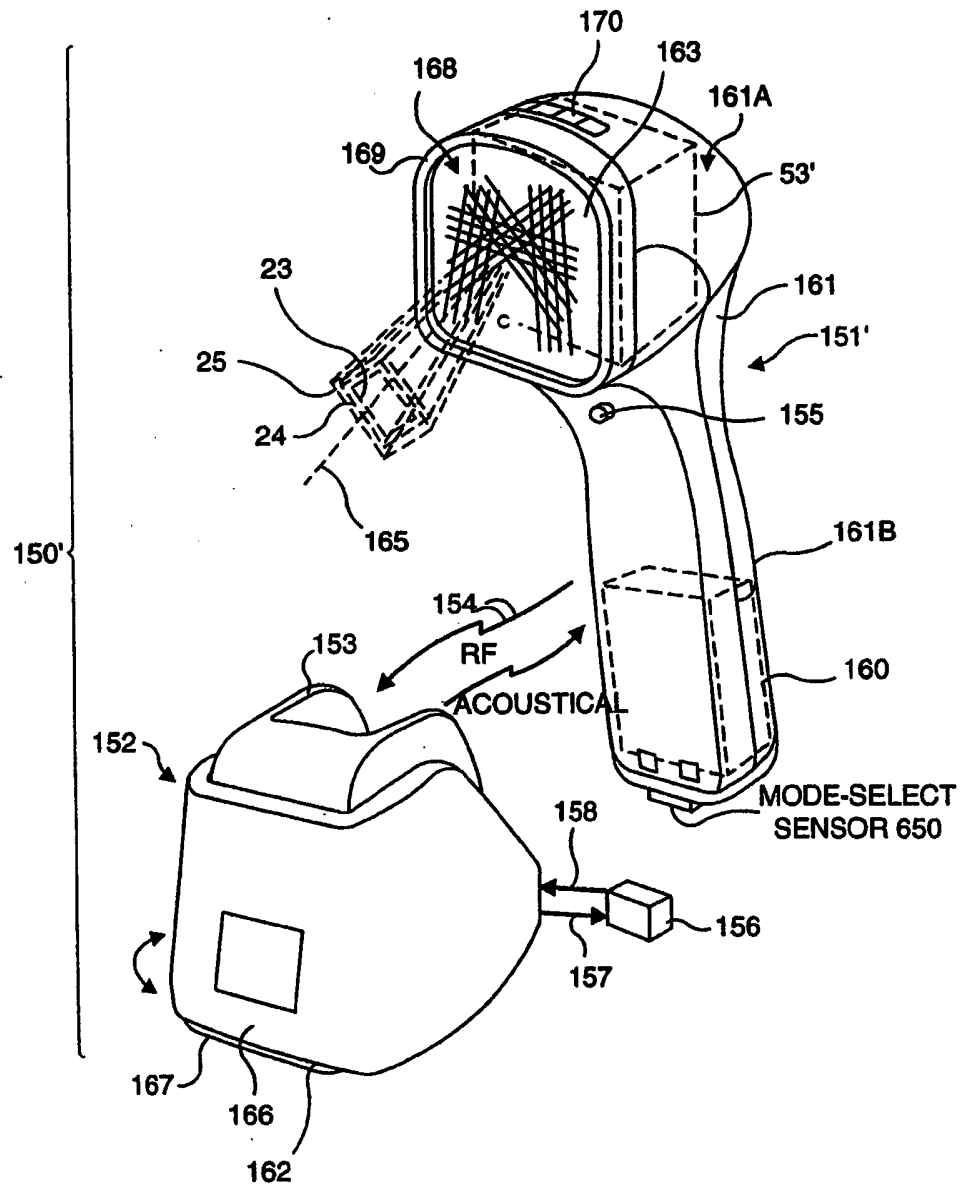


FIG. 7B

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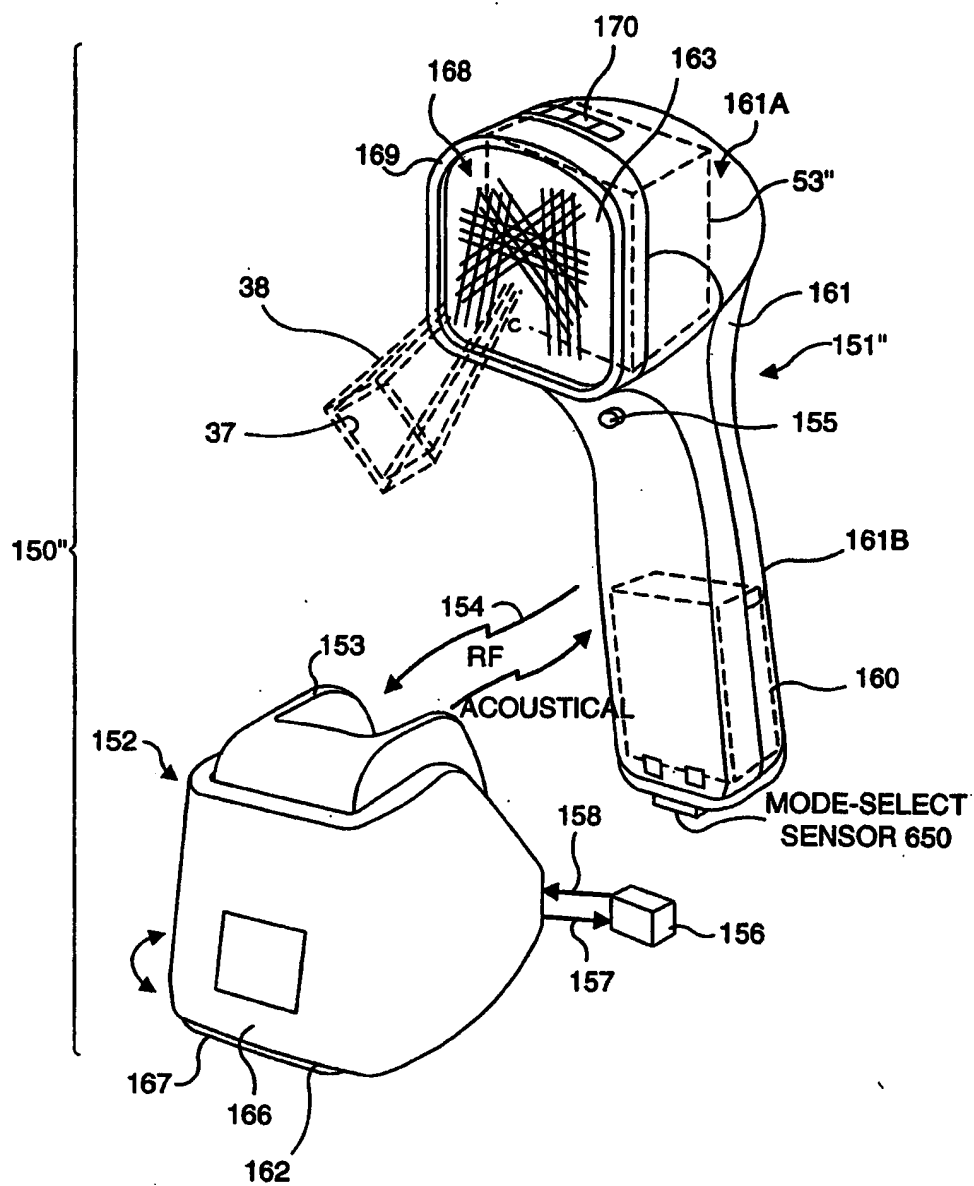
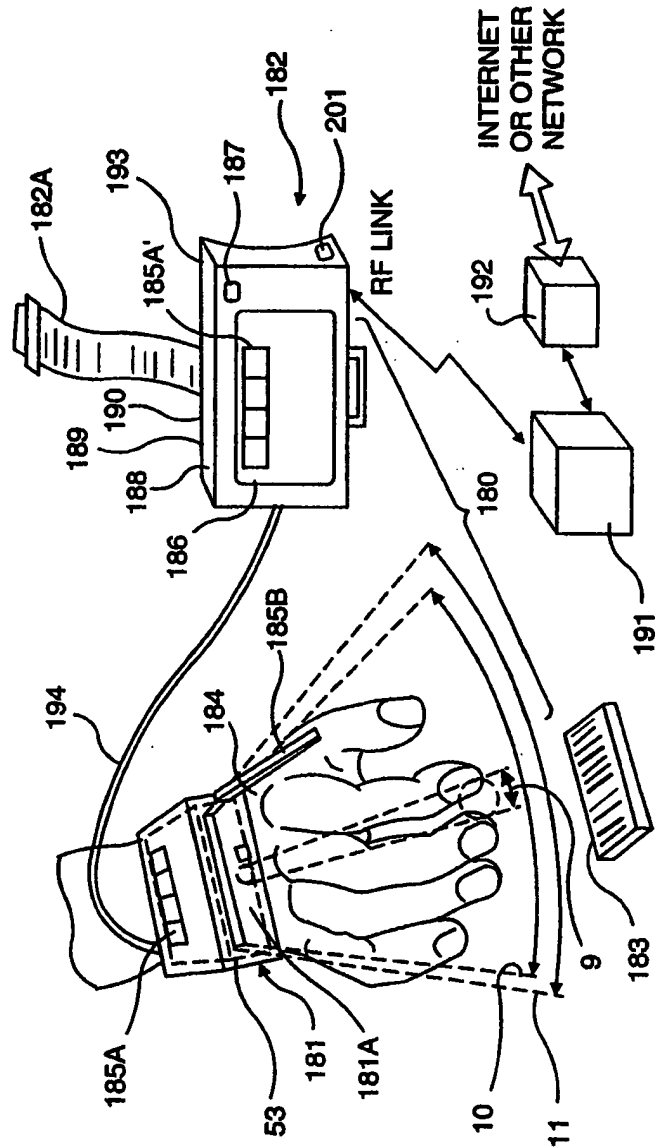


FIG. 7C

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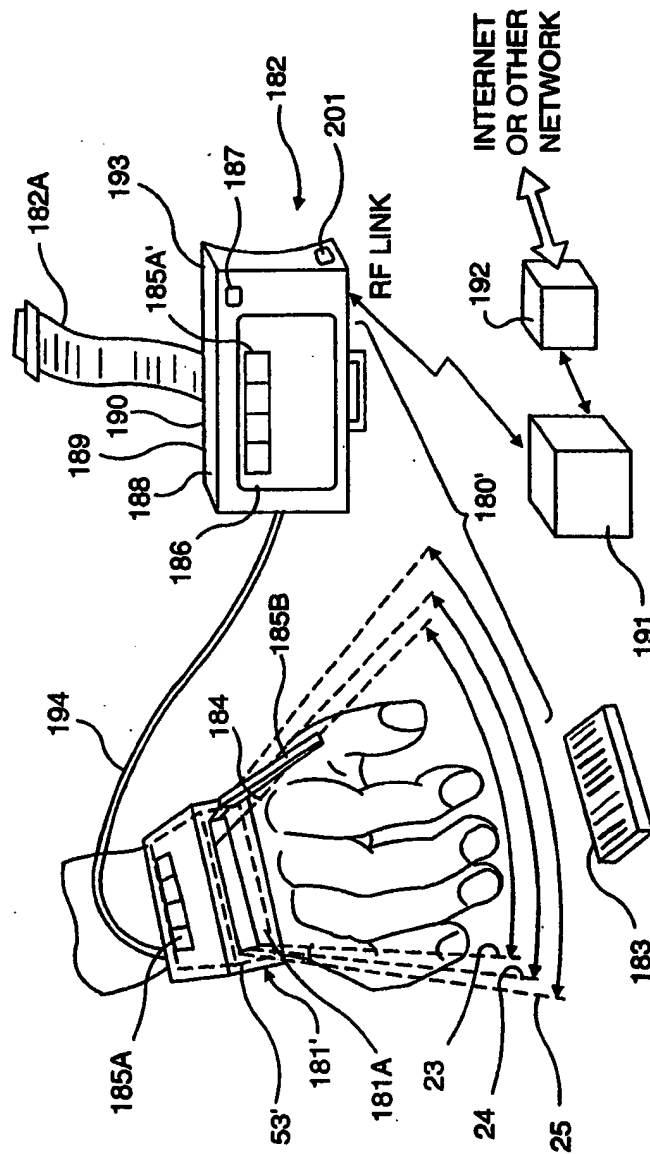


FIG. 8B

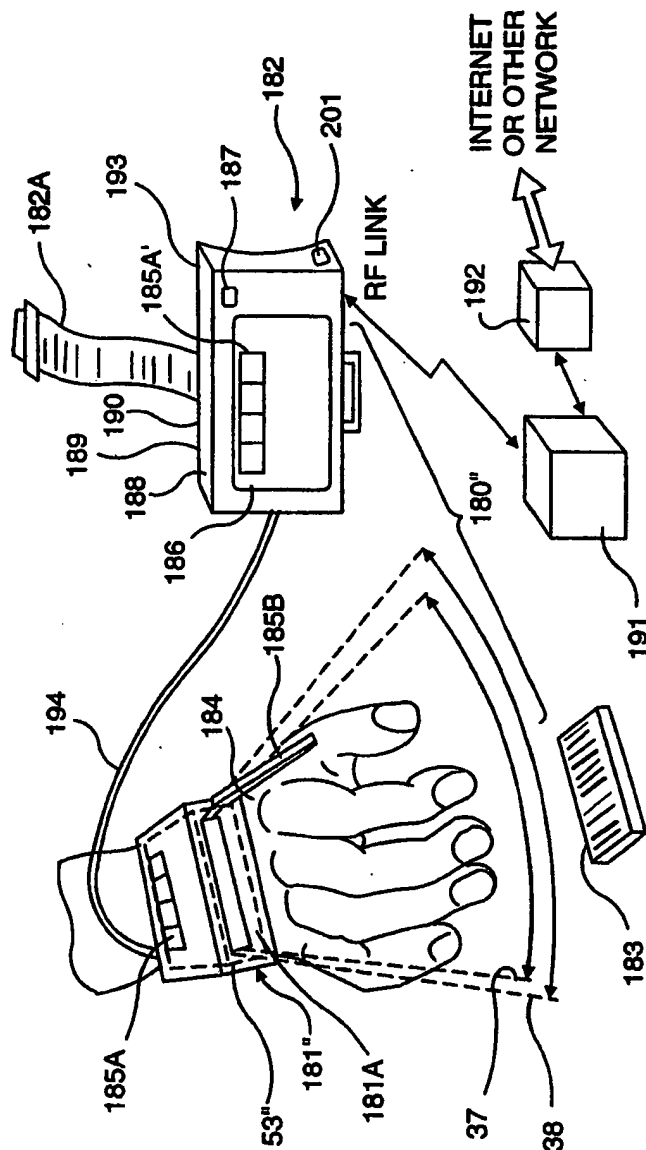


FIG. 8C

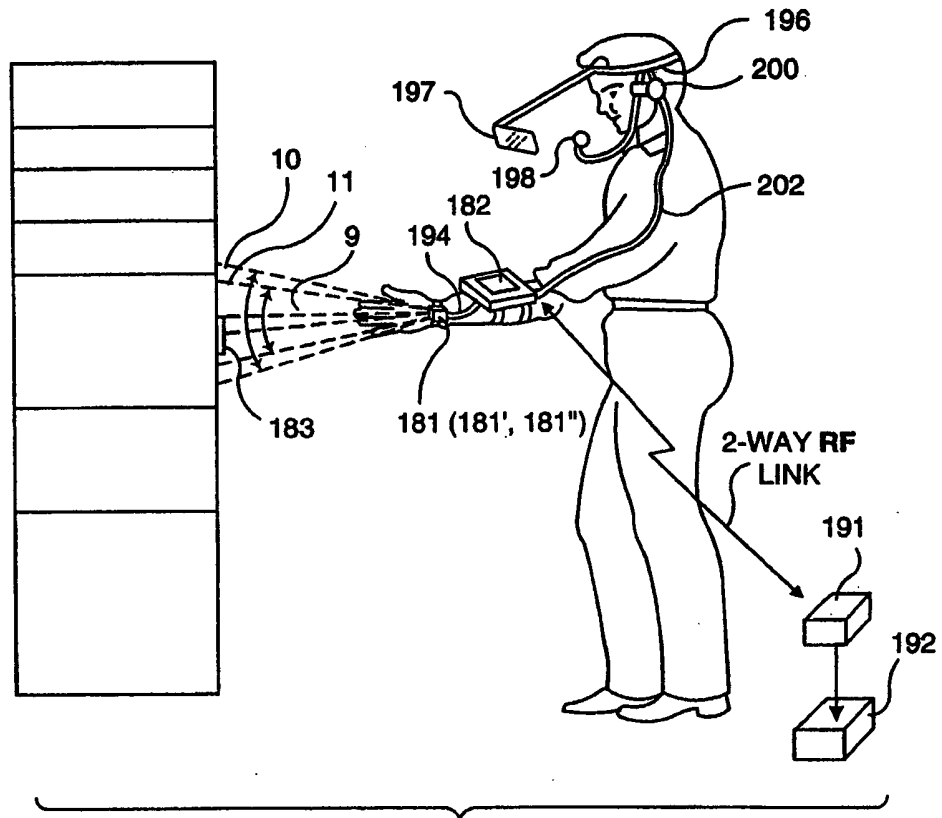
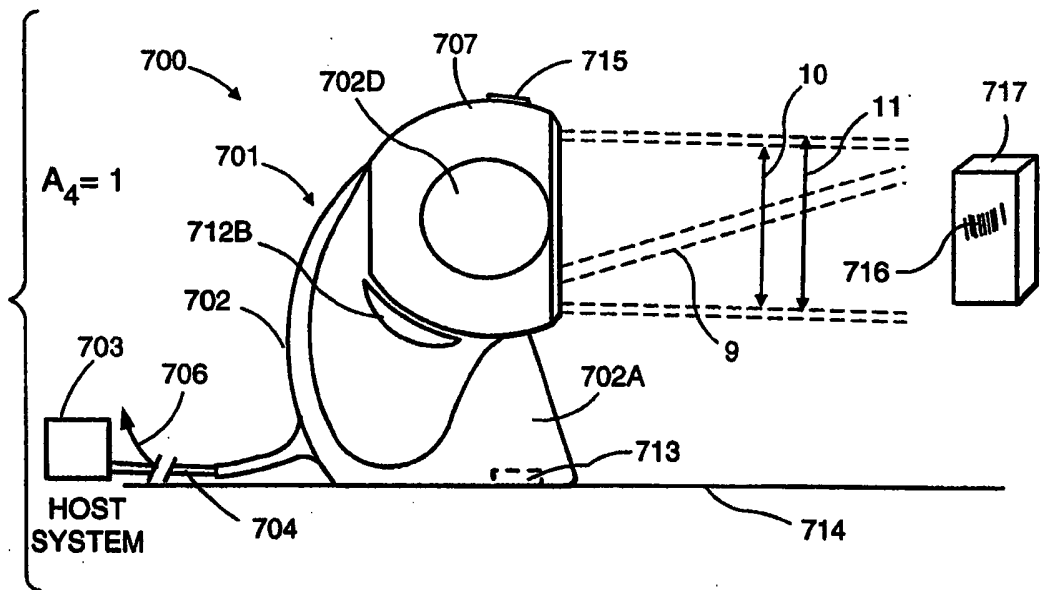
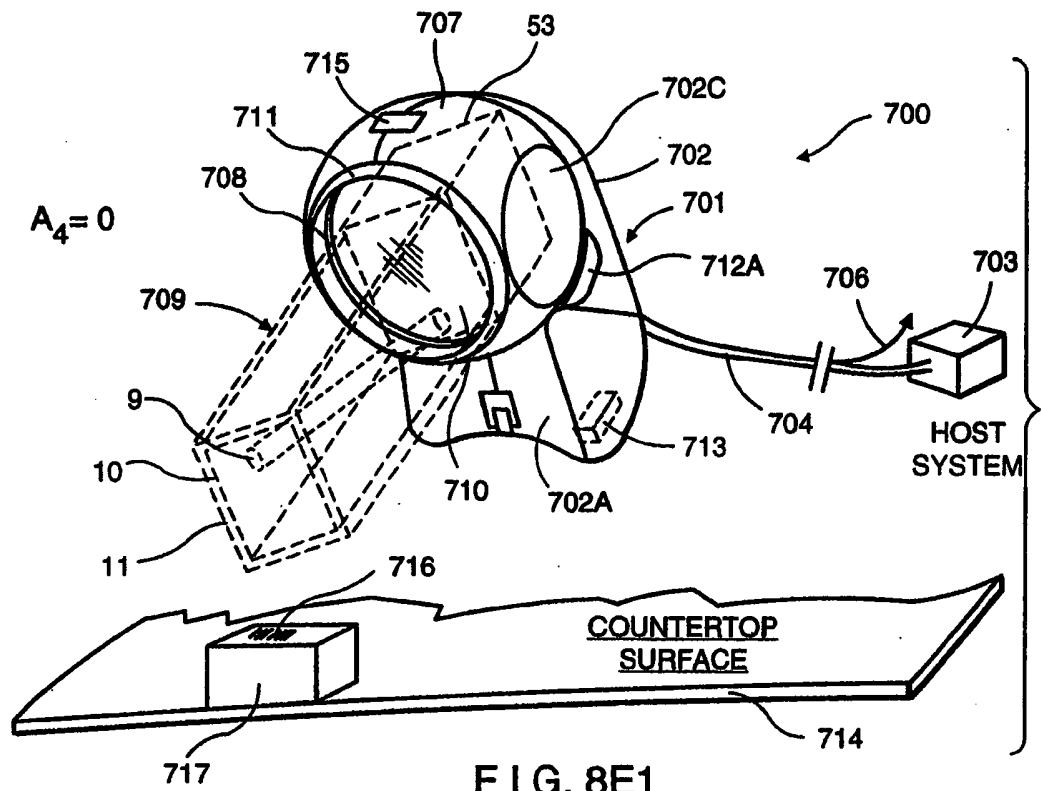


FIG. 8D

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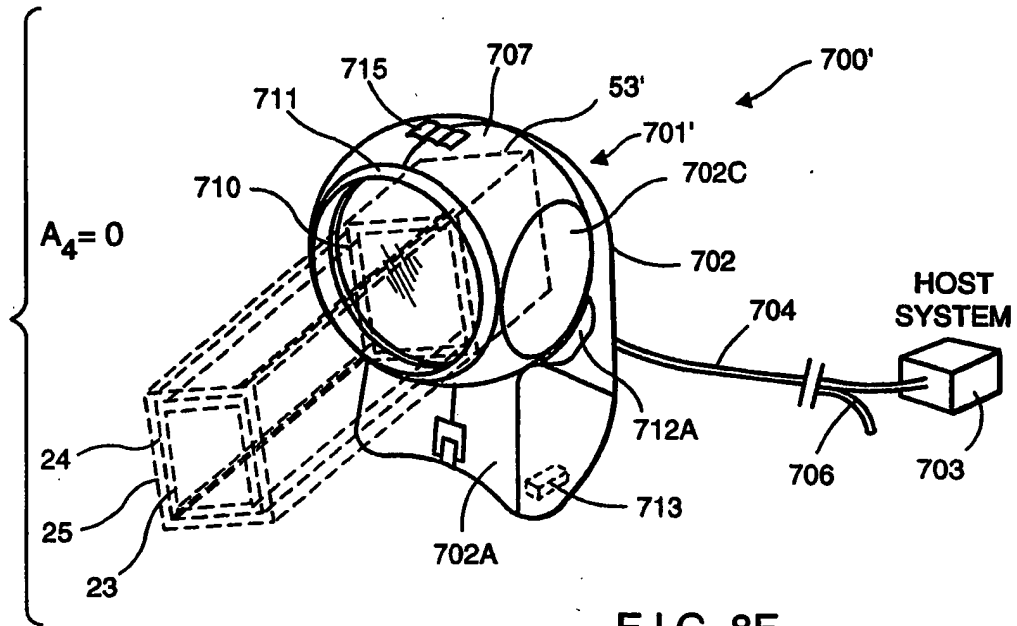


FIG. 8F

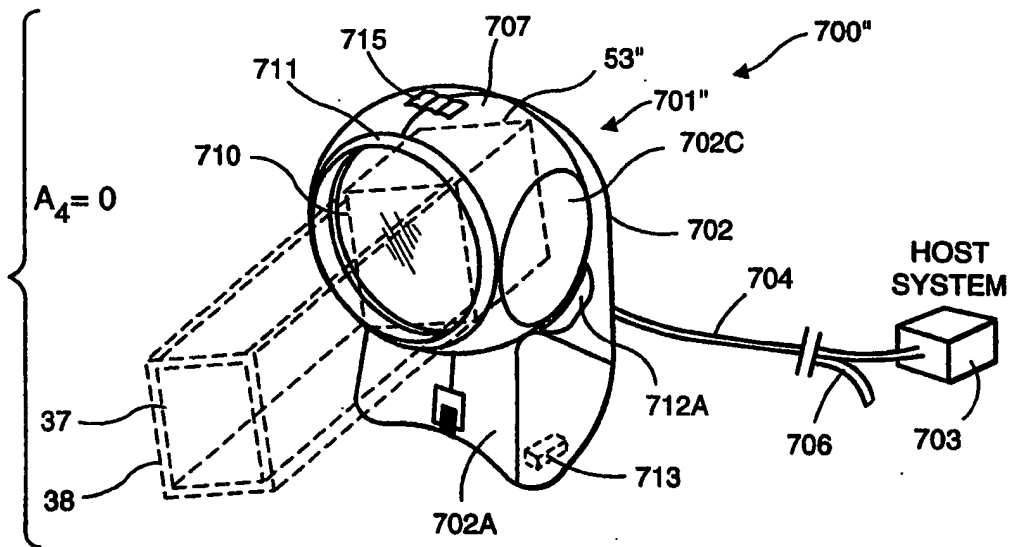


FIG. 8G

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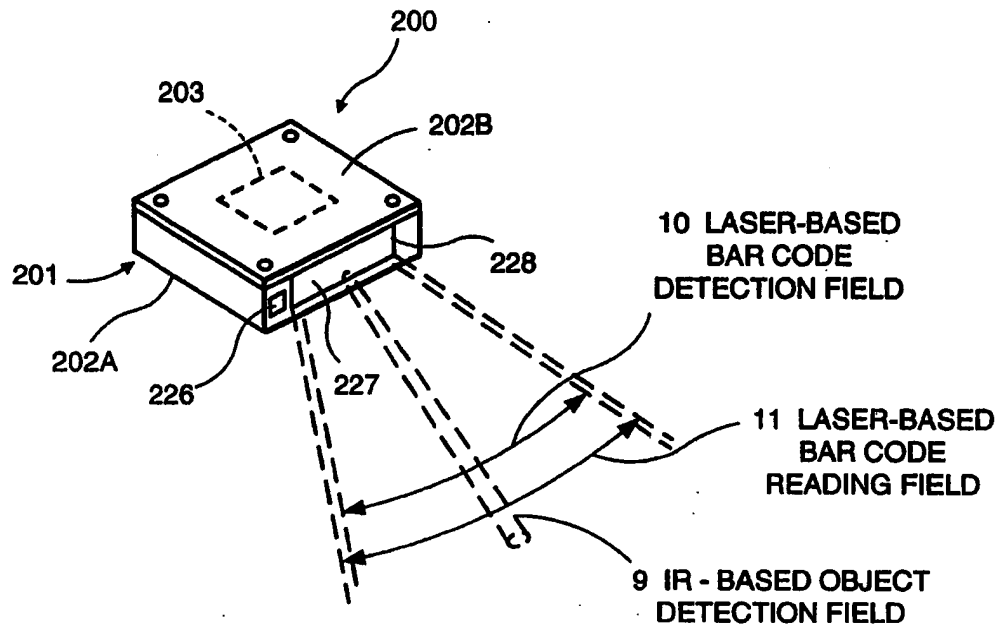


FIG. 9A

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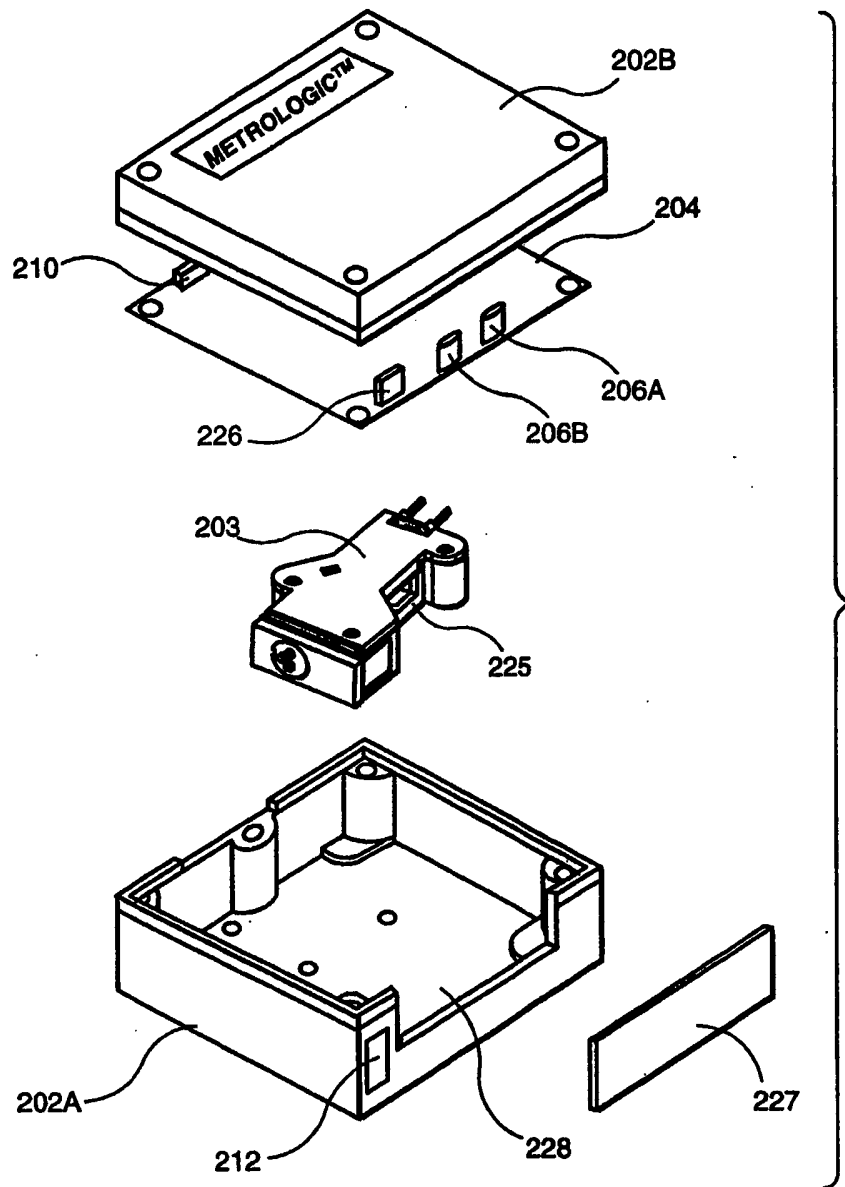


FIG. 9B

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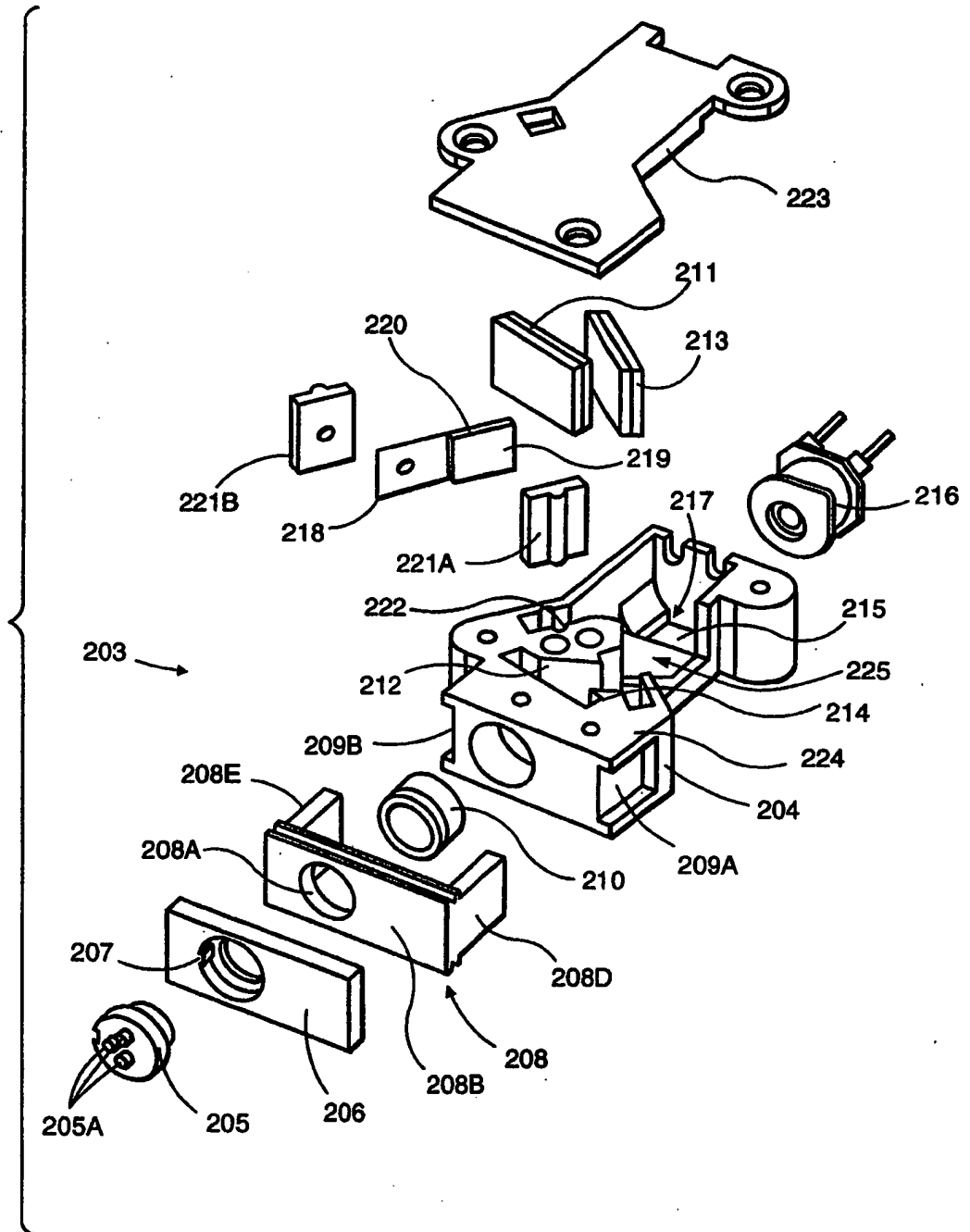


FIG. 9C

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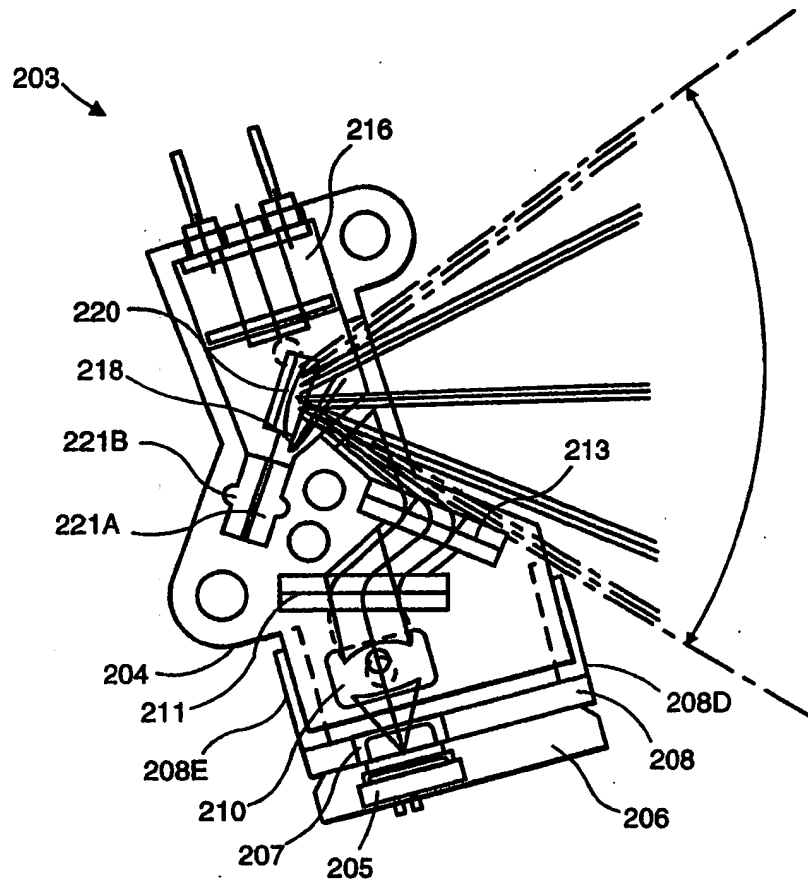


FIG. 9D

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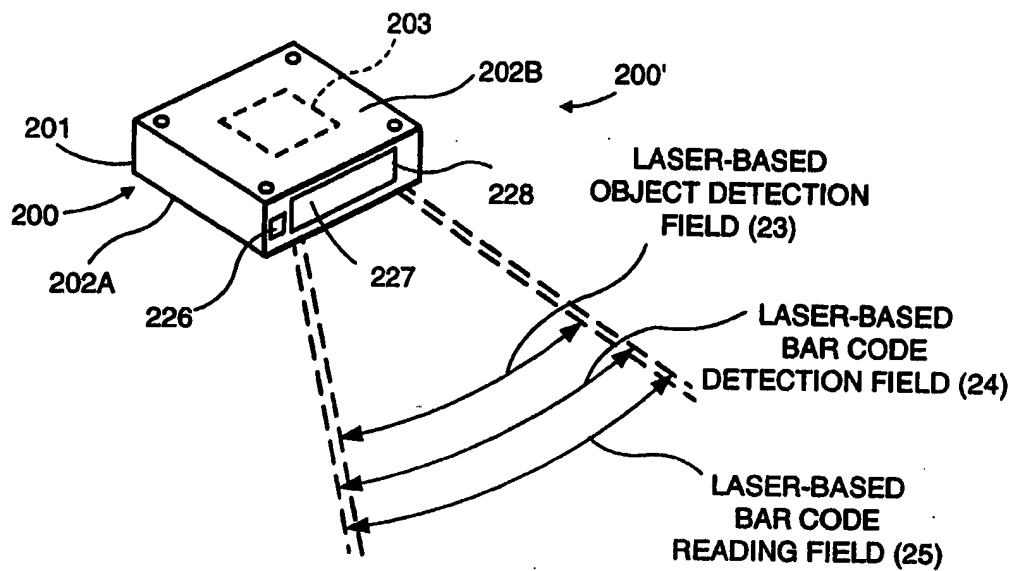


FIG. 9E

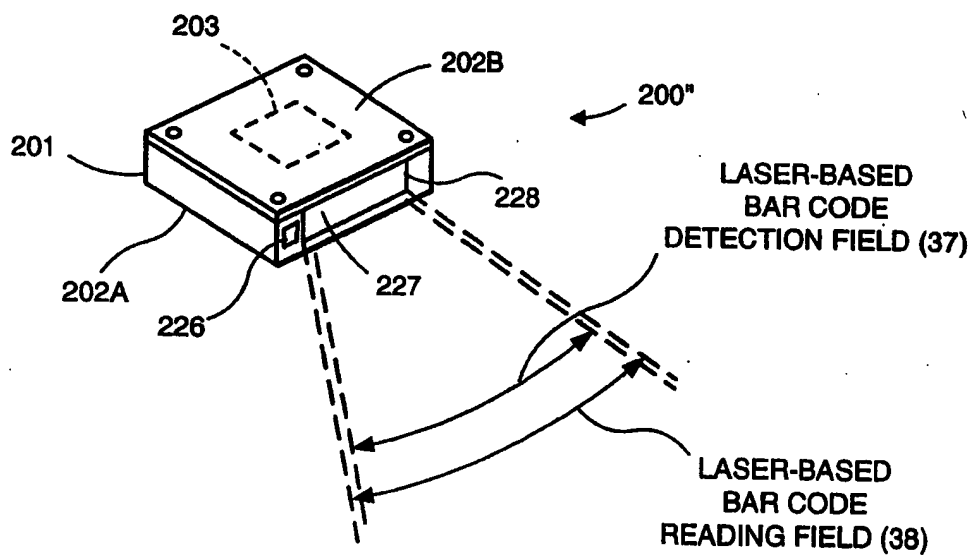


FIG. 9F

FIG. 10A

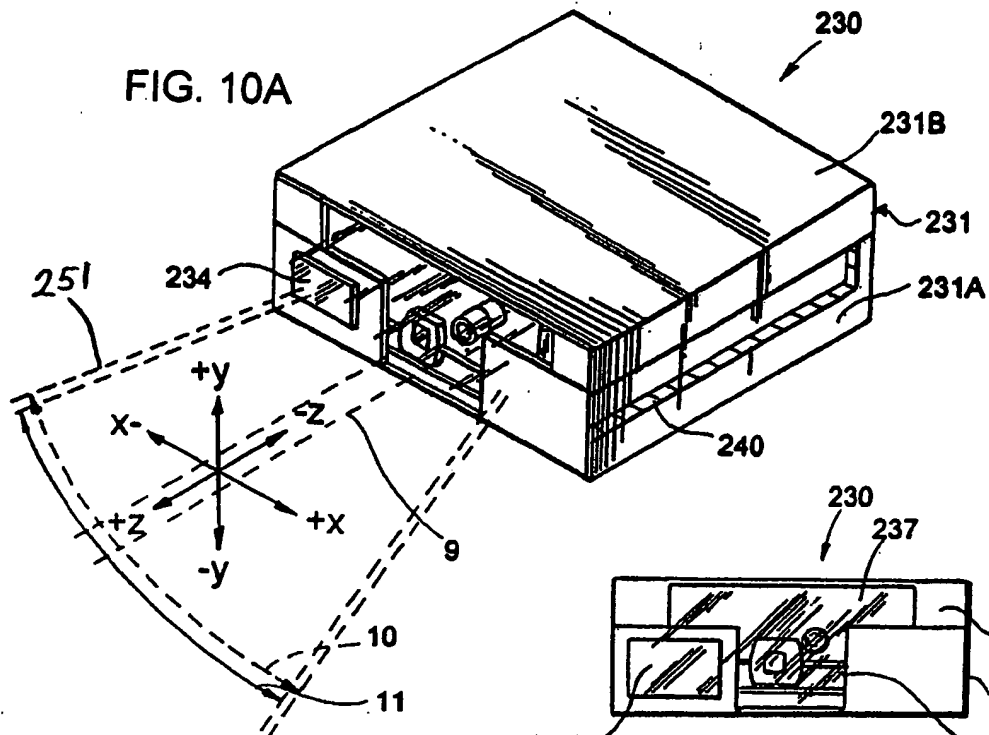


FIG. 10B

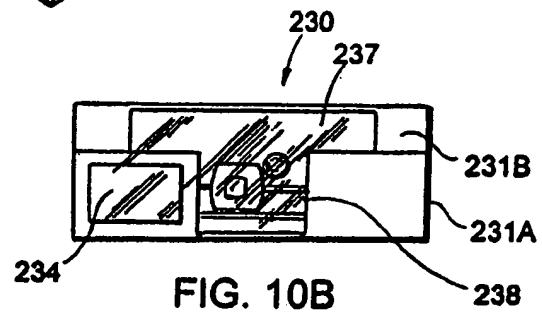


FIG. 10C

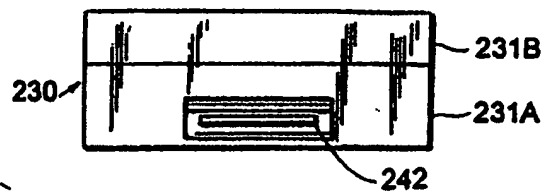
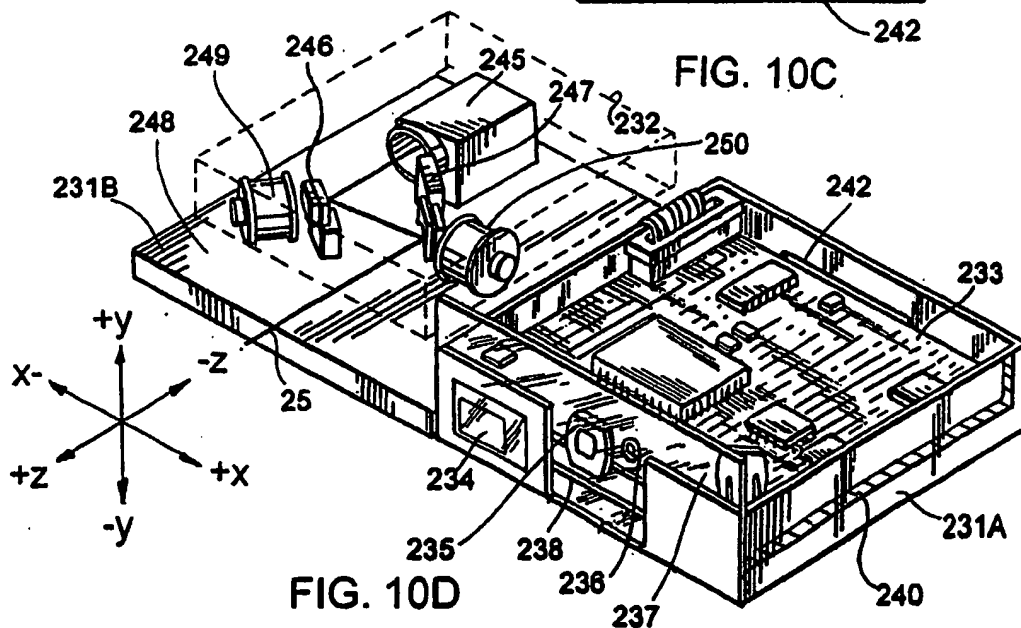


FIG. 10D



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FIG. 10E

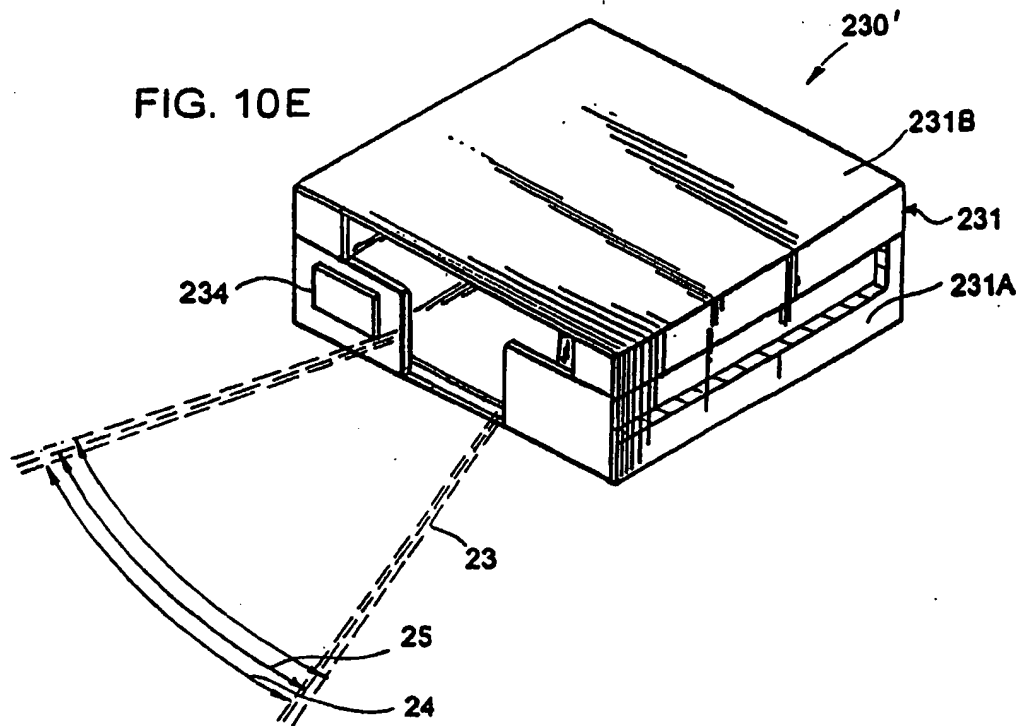
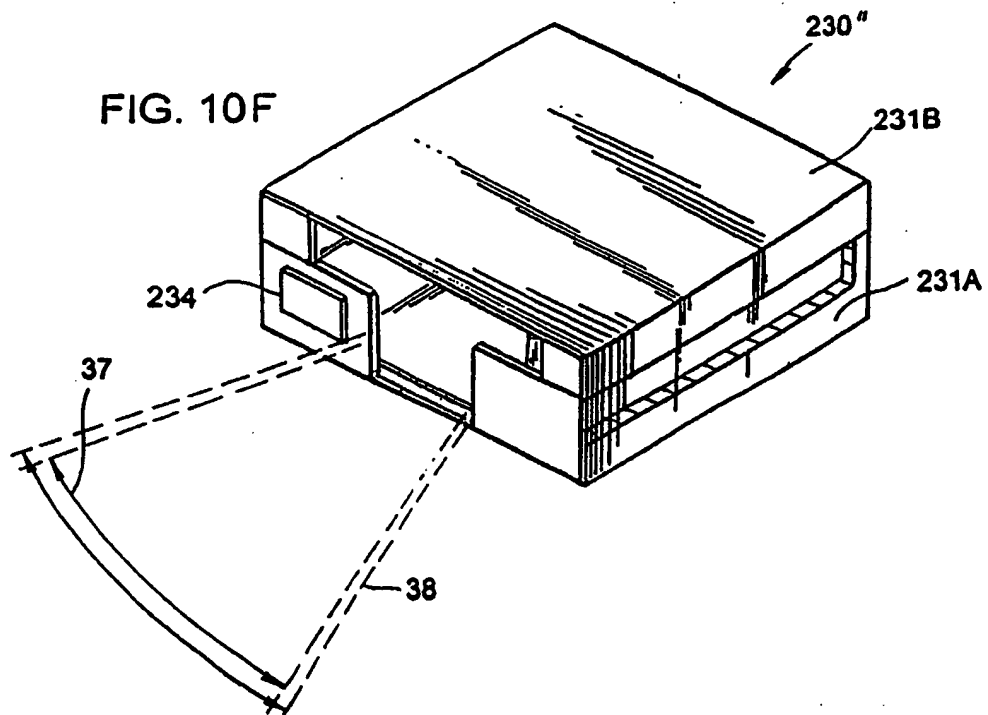


FIG. 10F



[illegible]

FIG. 11C

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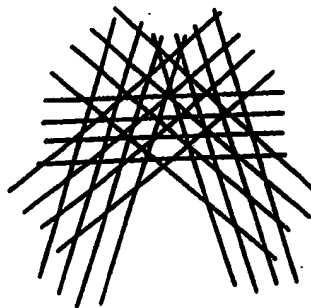


FIG. 12A

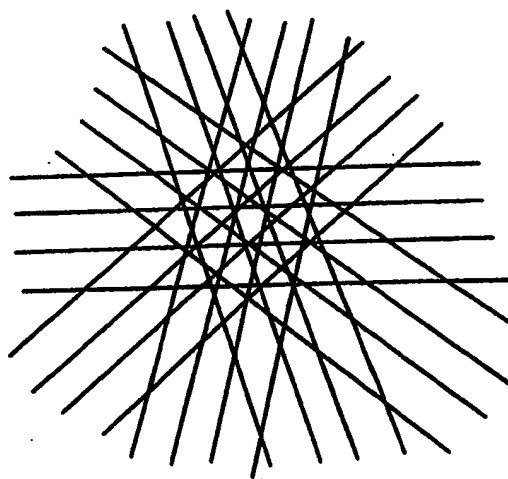
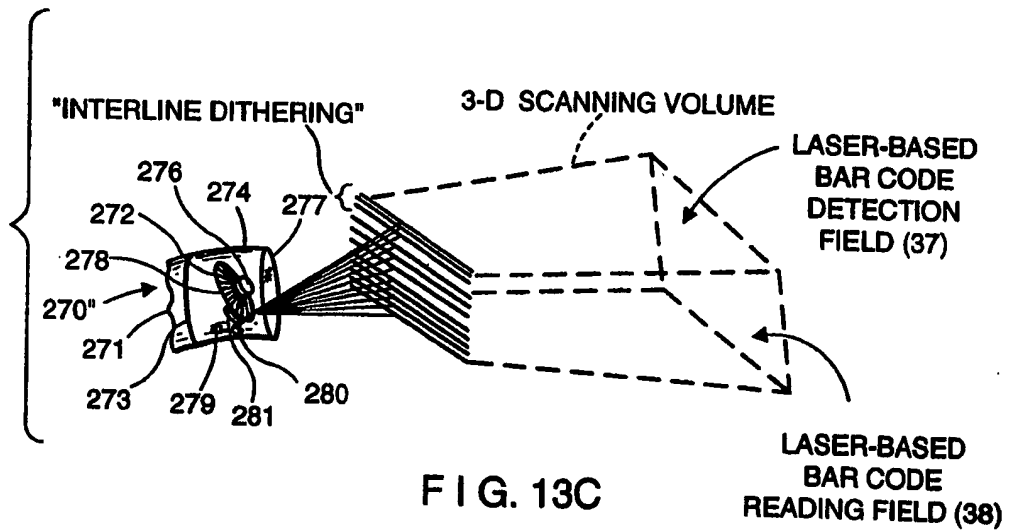
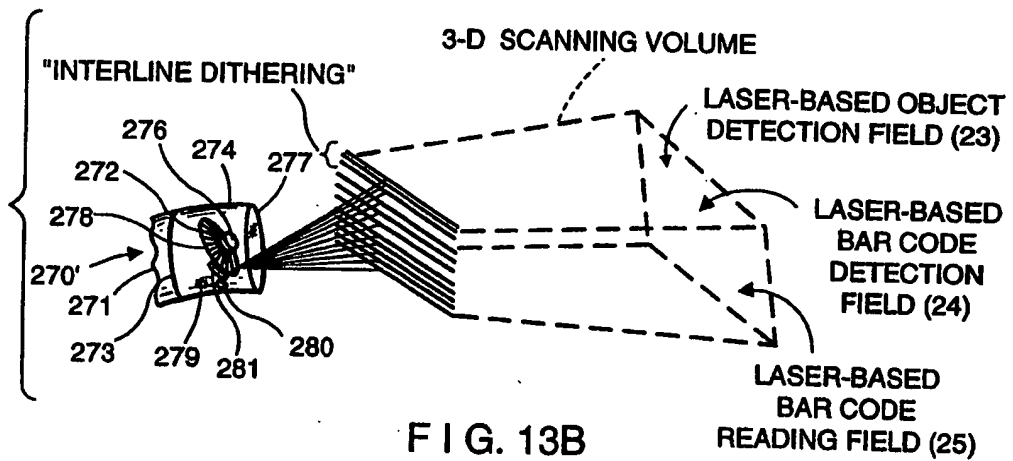
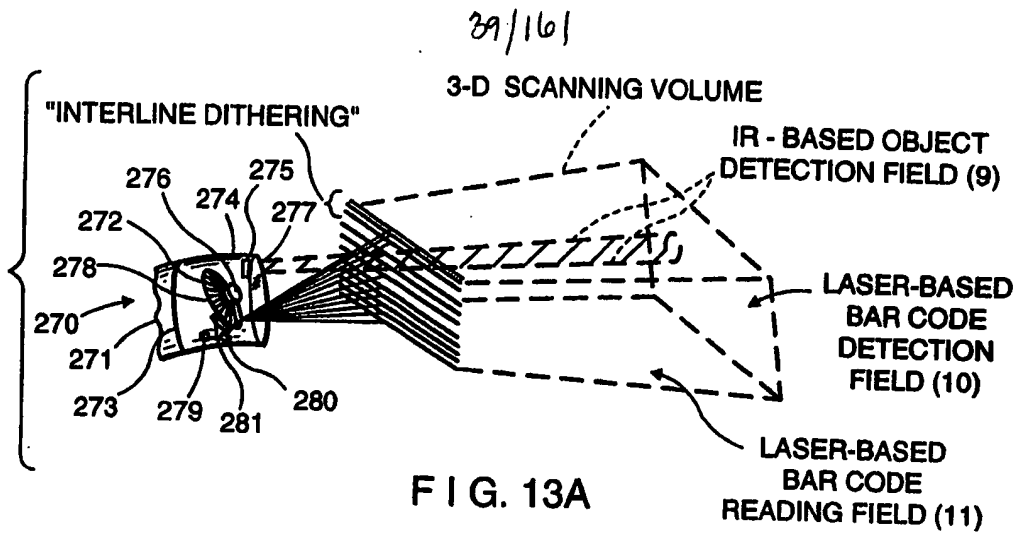
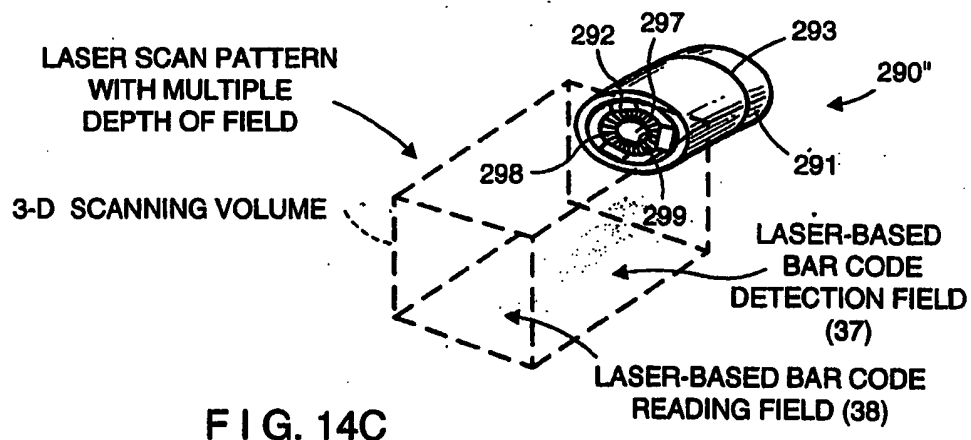
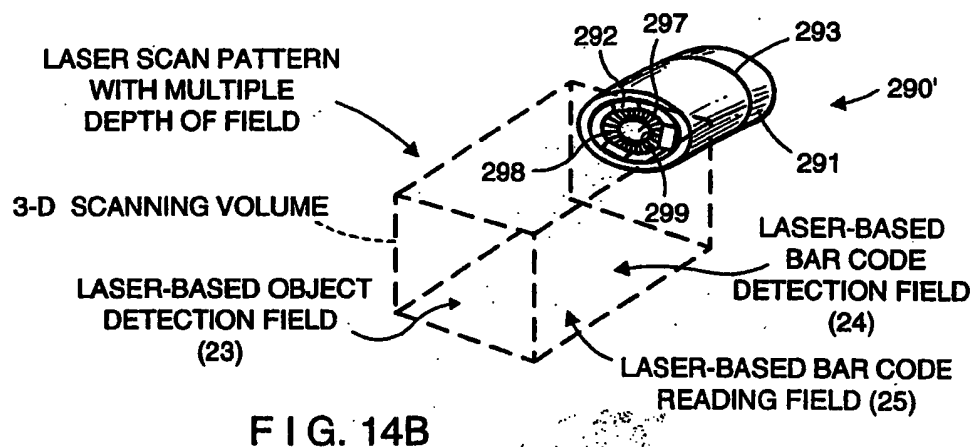
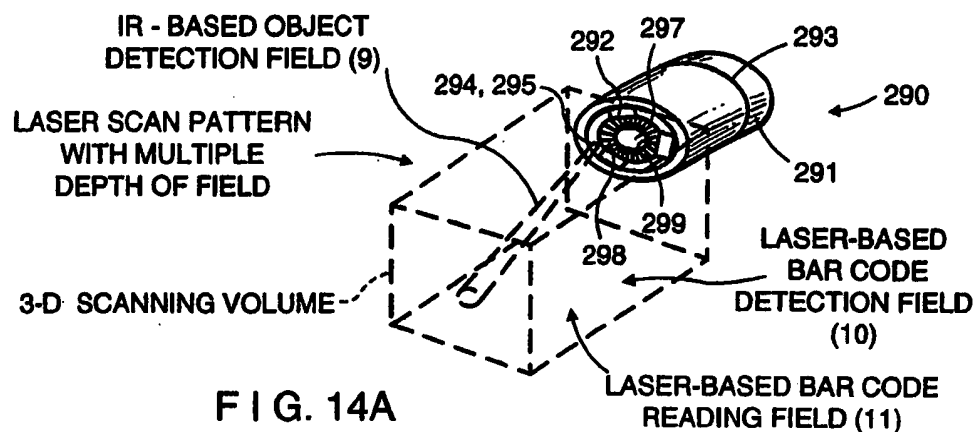


FIG. 12B





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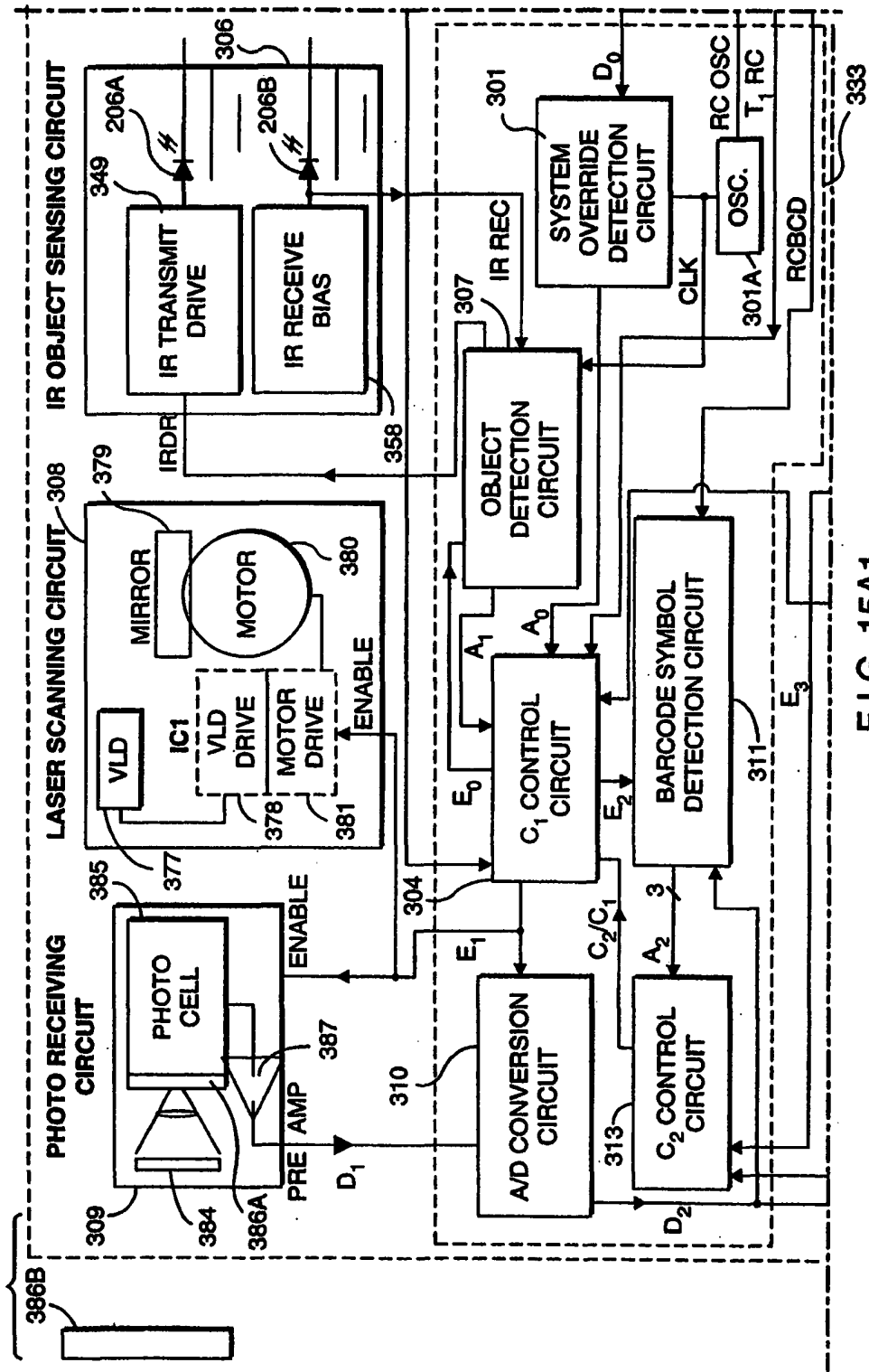


FIG. 15A1

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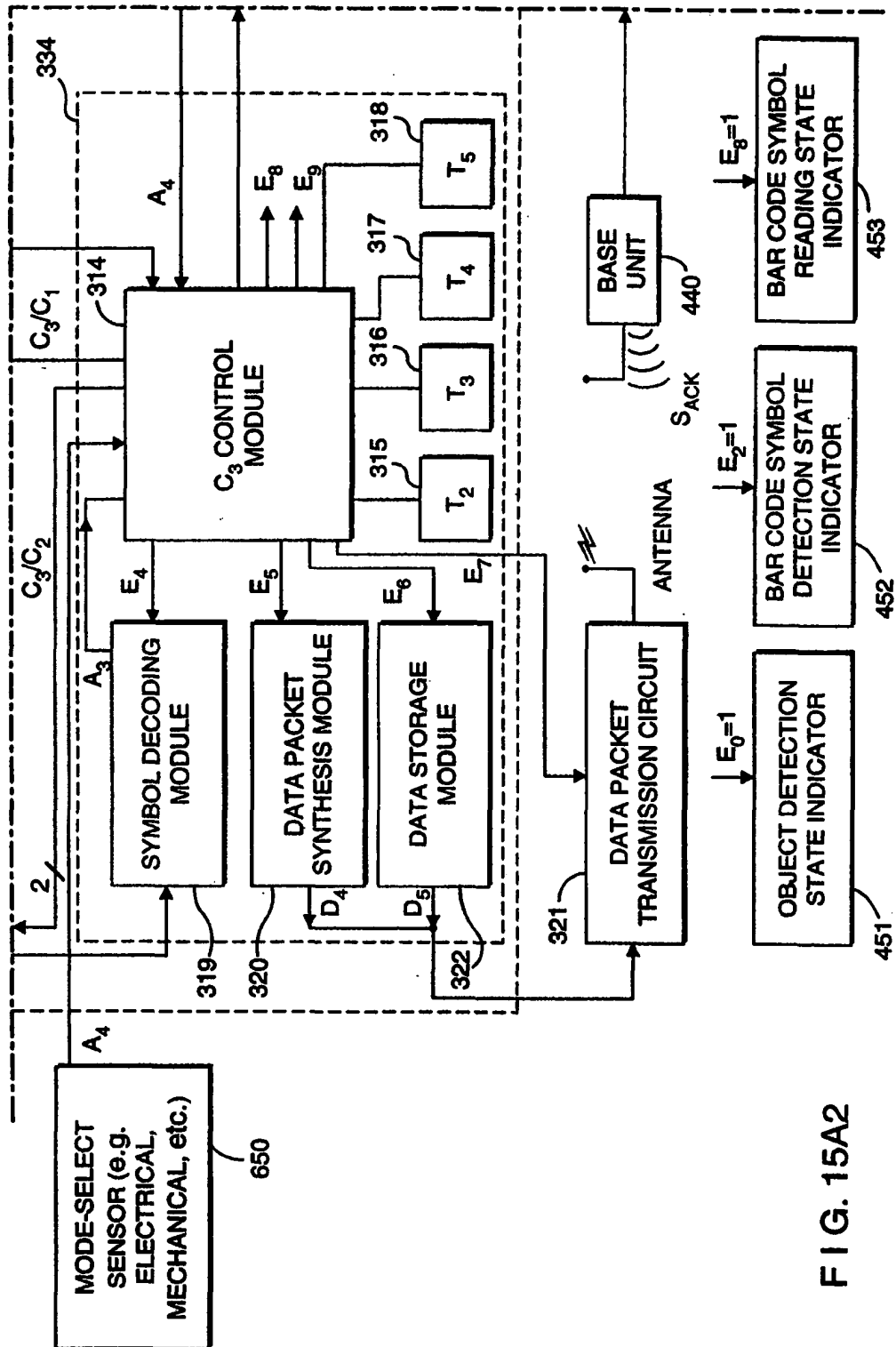


FIG. 15A2

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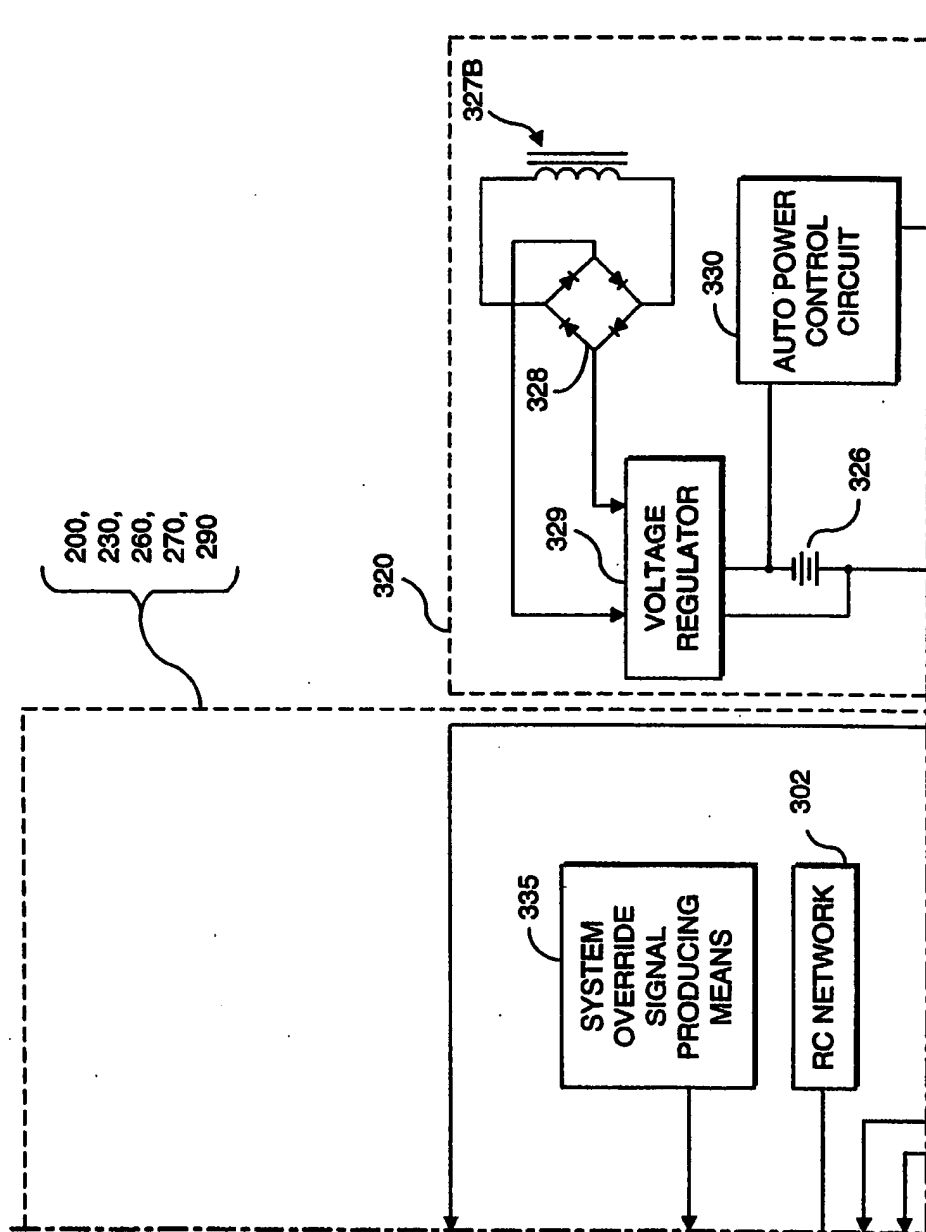
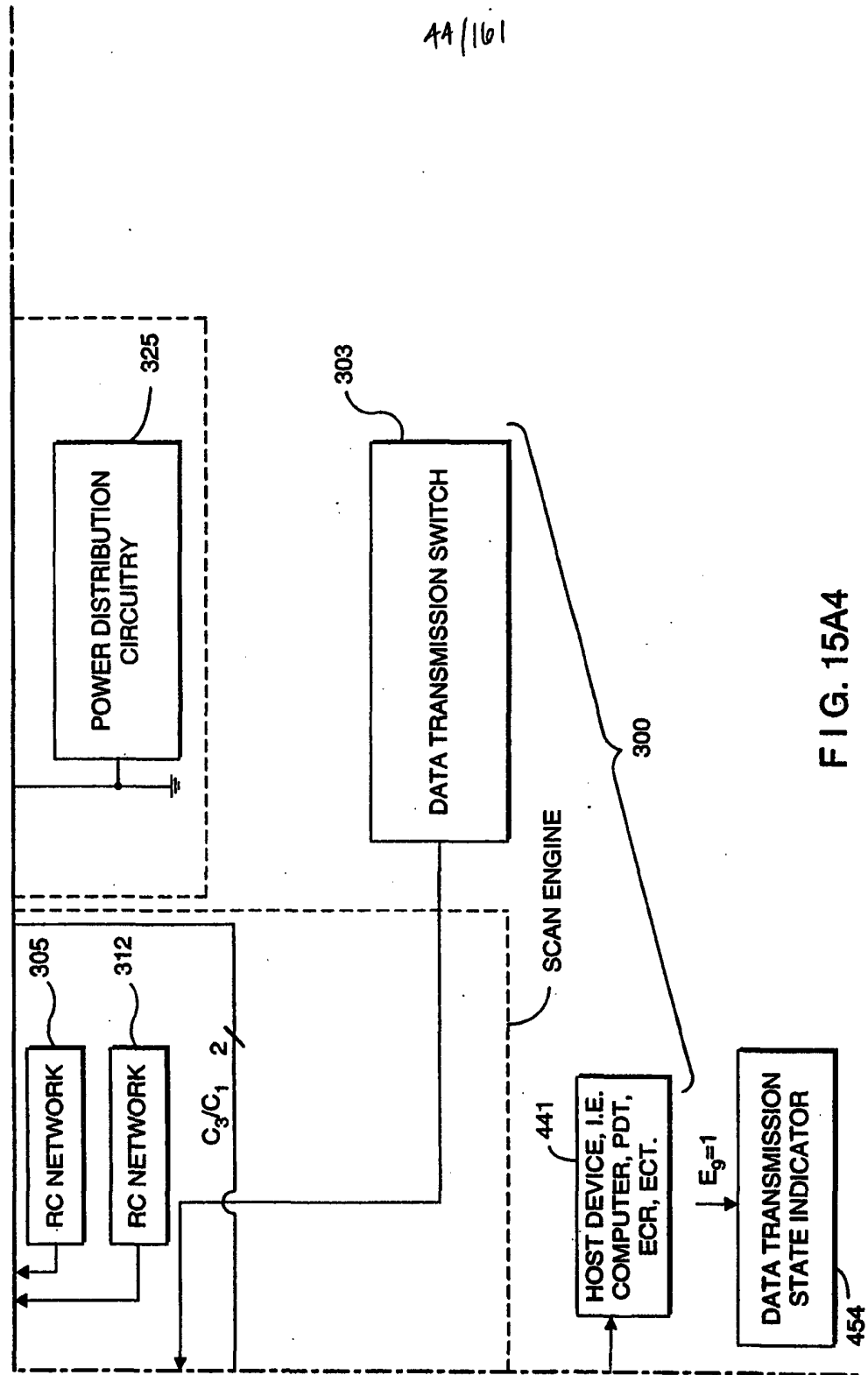


FIG. 15A3

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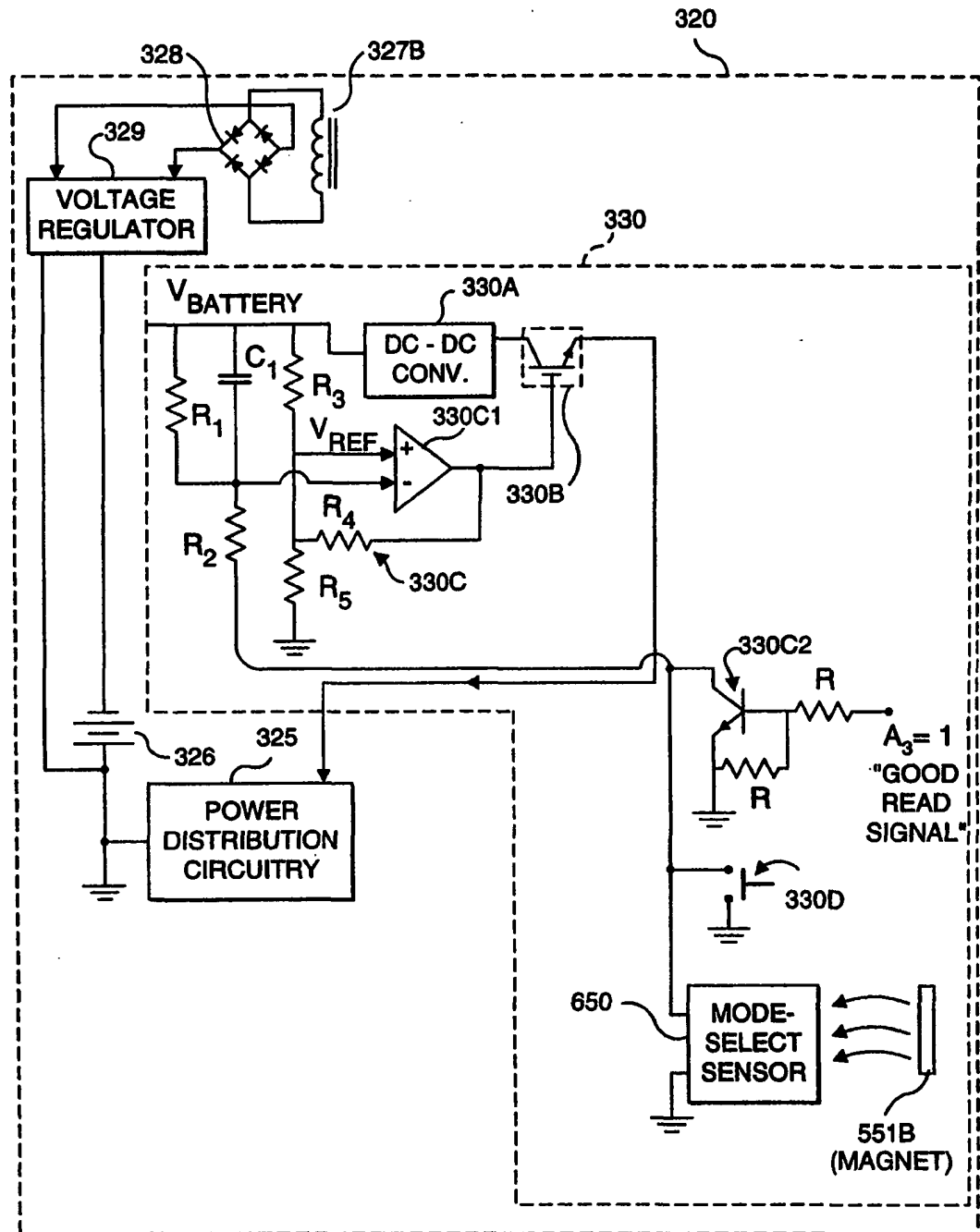


FIG. 15B1

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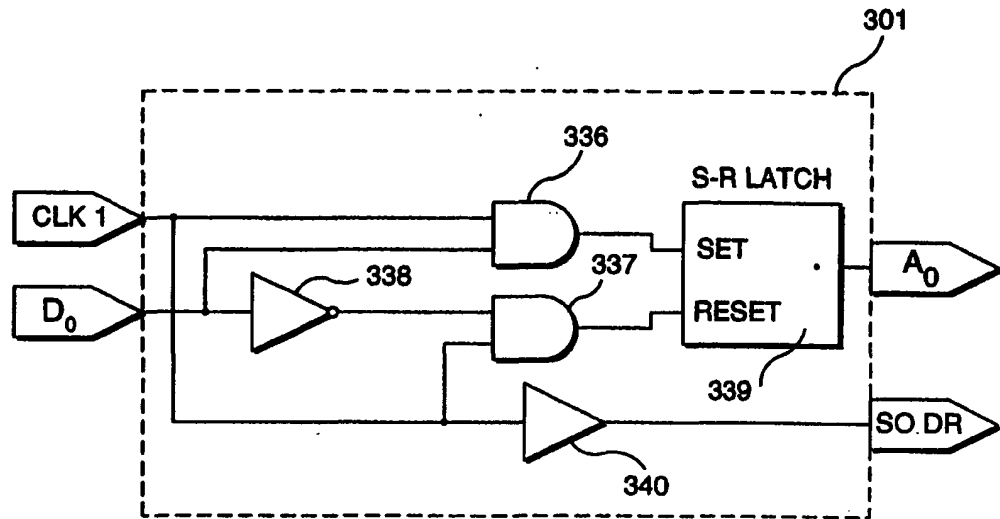


FIG. 15B2

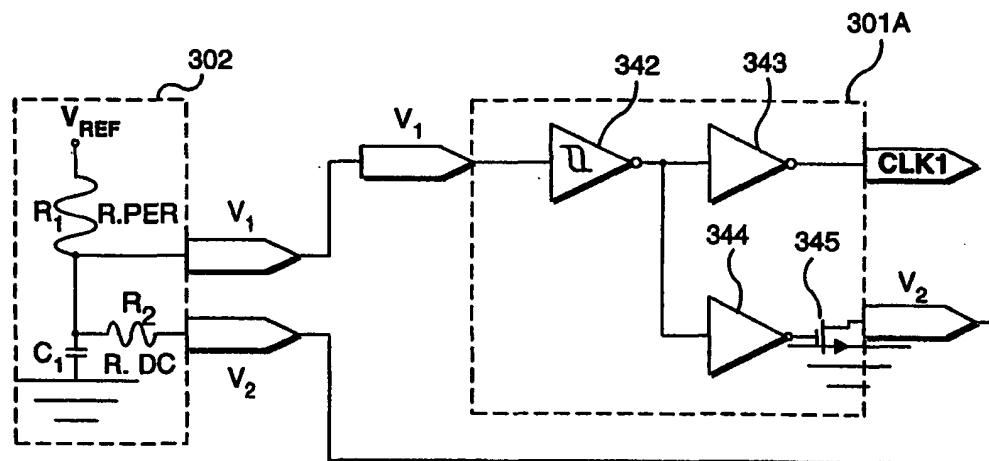


FIG. 15C

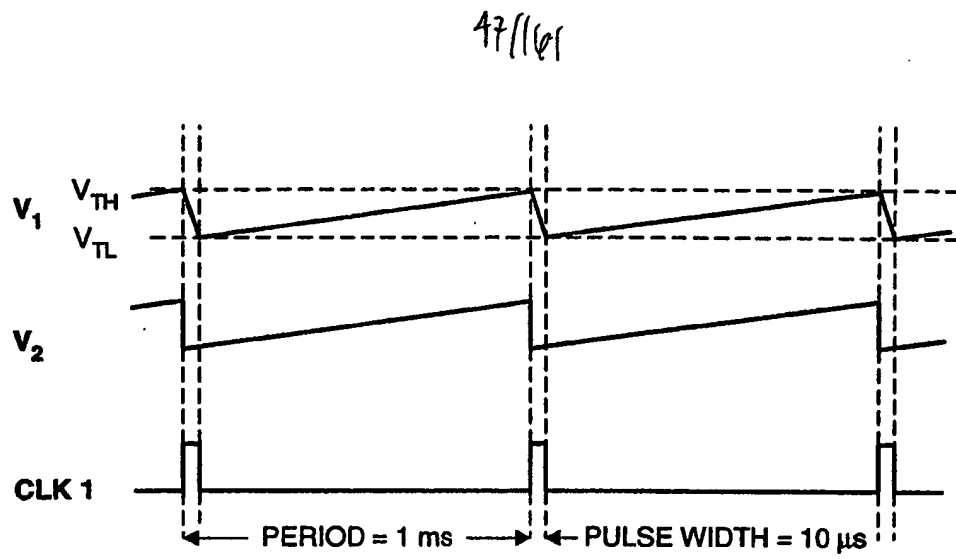


FIG. 15D

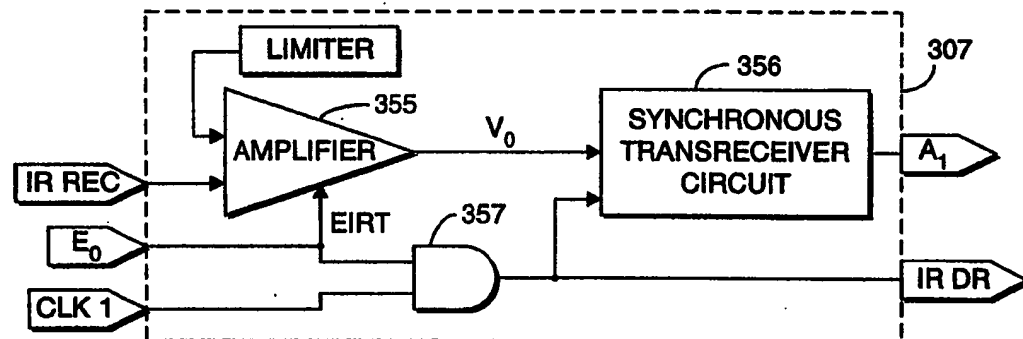


FIG. 15E

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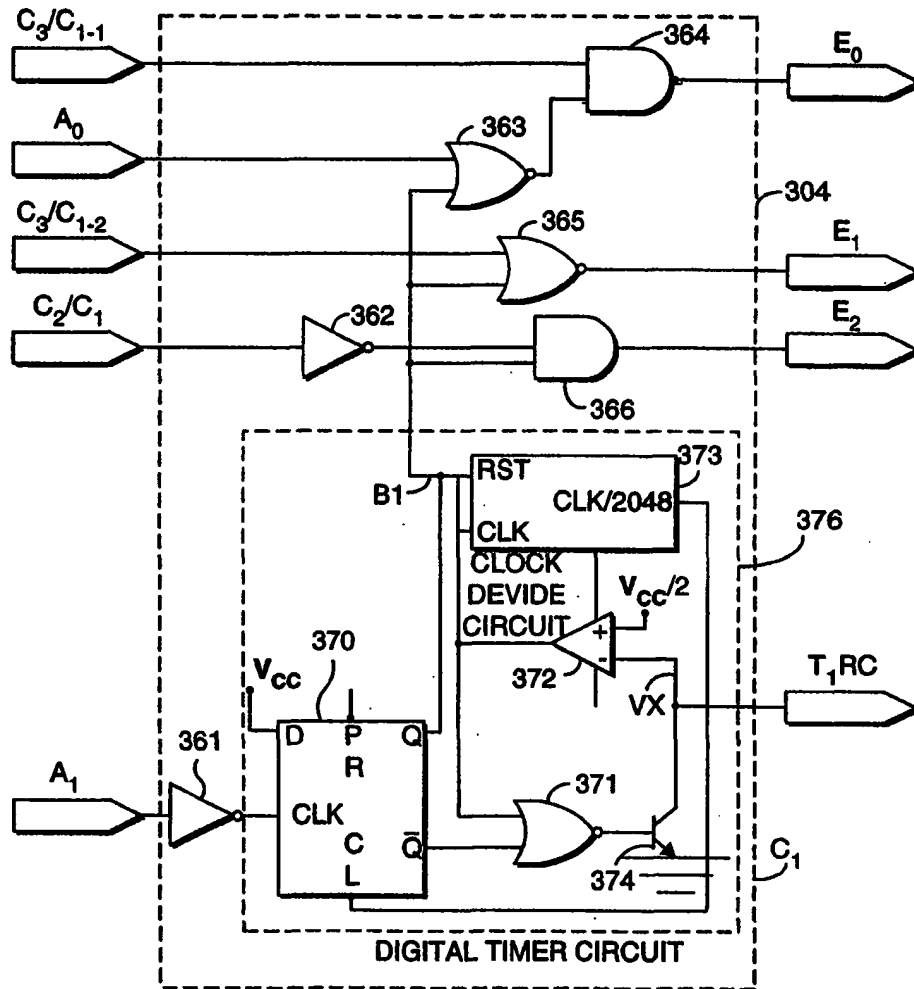


FIG. 15F

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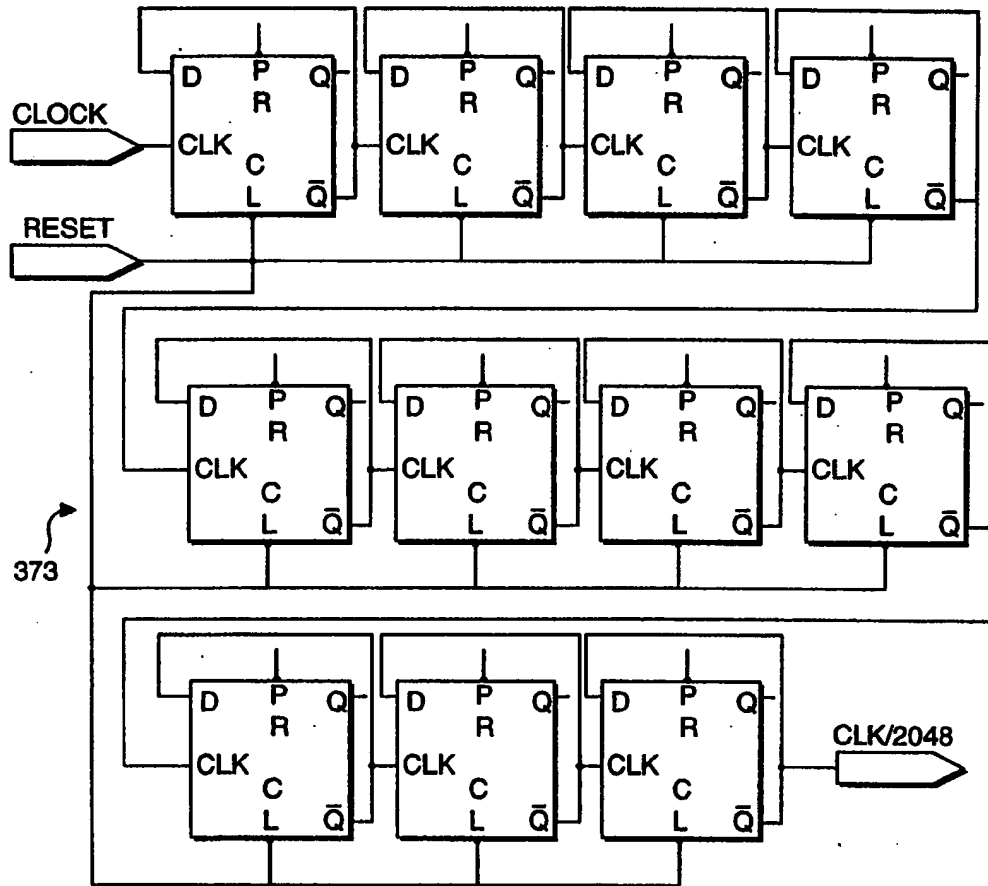


FIG. 15G

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$$\left. \begin{aligned} E_0 &= (B1 + A_0) (C_3 / C_{1-1}) \\ E_1 &= (C_3 / C_{1-2}) + B1 \\ E_2 &= (C_2 / C_1) (T_1) \end{aligned} \right\}$$

FIG. 15H

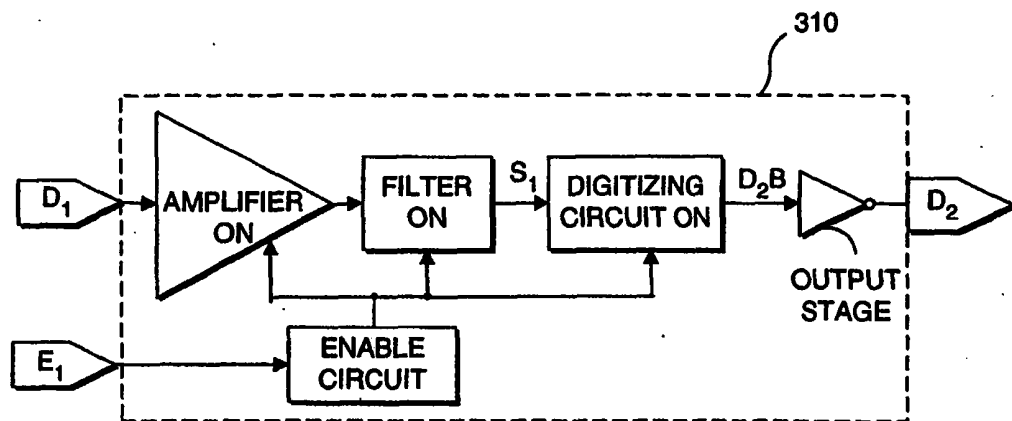


FIG. 15I

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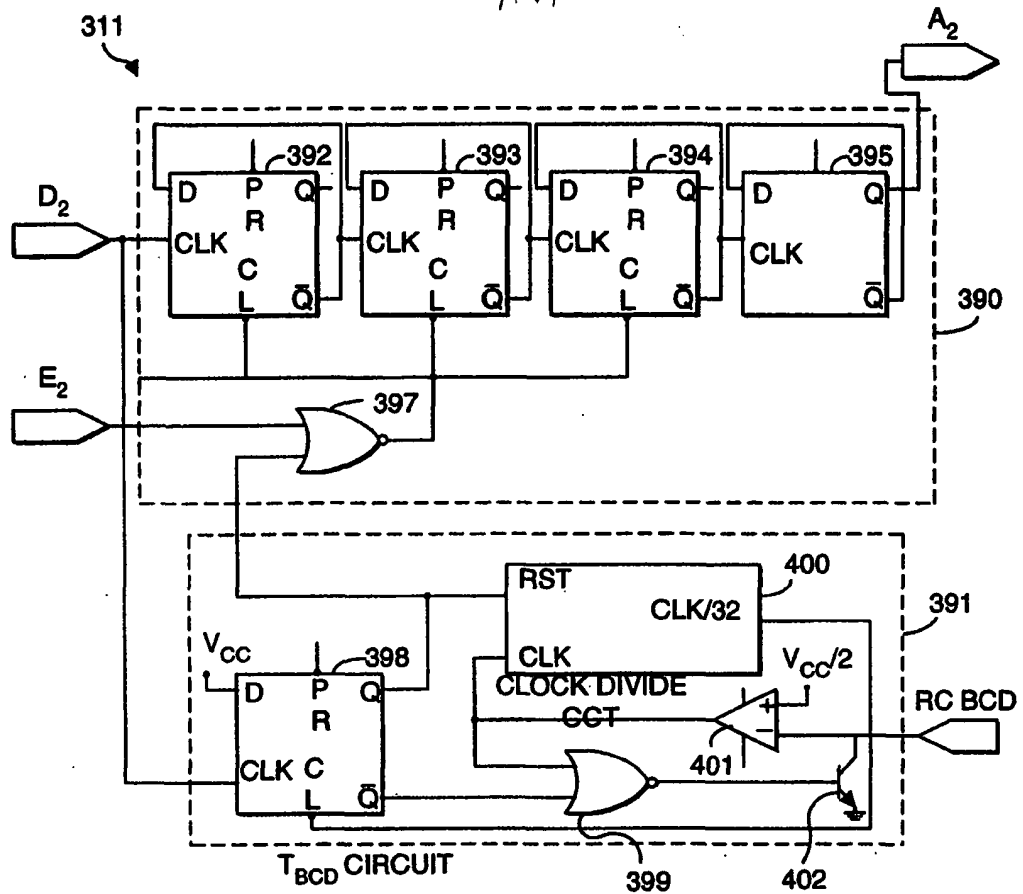


FIG. 15J

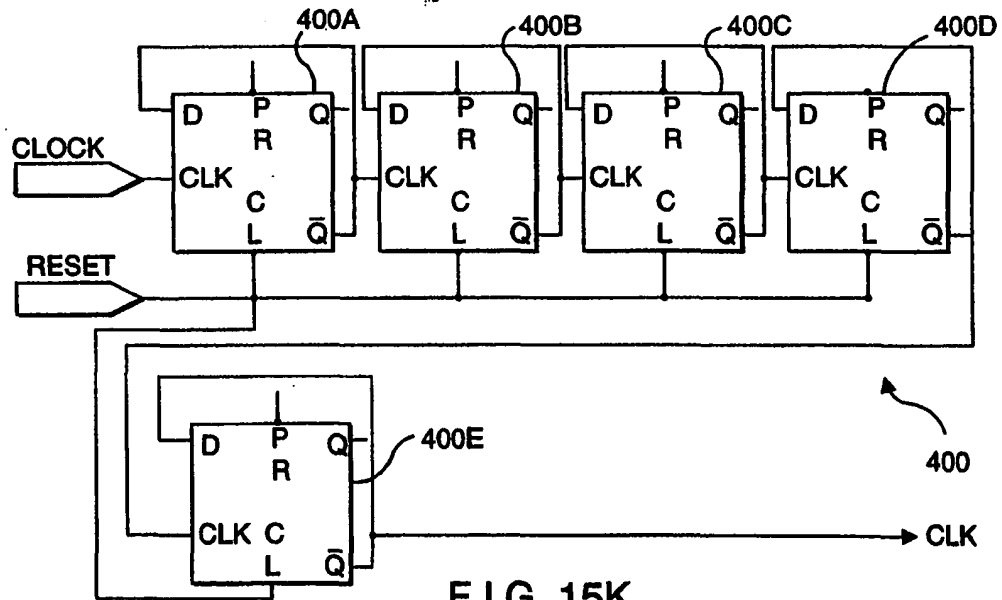


FIG. 15K

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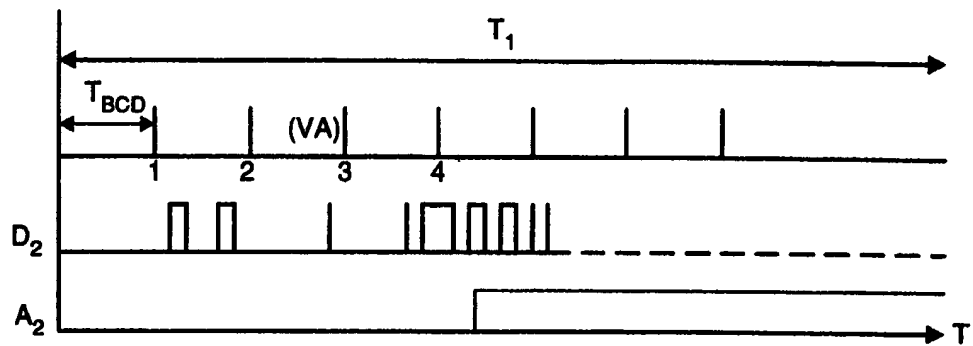


FIG. 15L

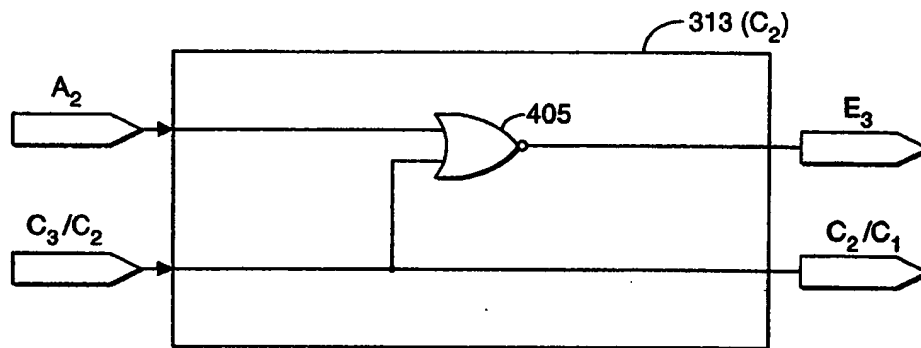


FIG. 15M

C_3/C_2	A_2	E_3	C_2/C_1
0	0	0	0
0	1	1	0
1	X	1	1

X: DON'T CARE (I.E. C_3/C_2 OVERRIDES A_2)

FIG. 15N

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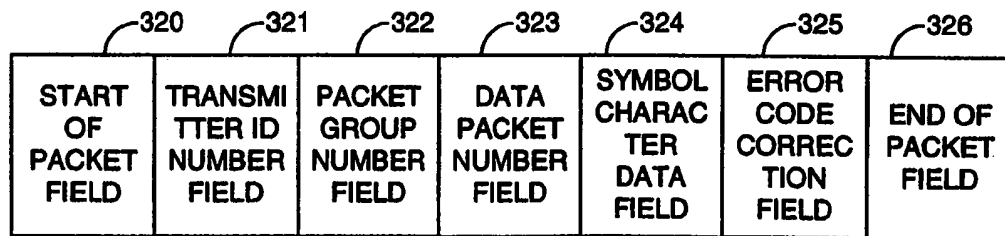


FIG. 150

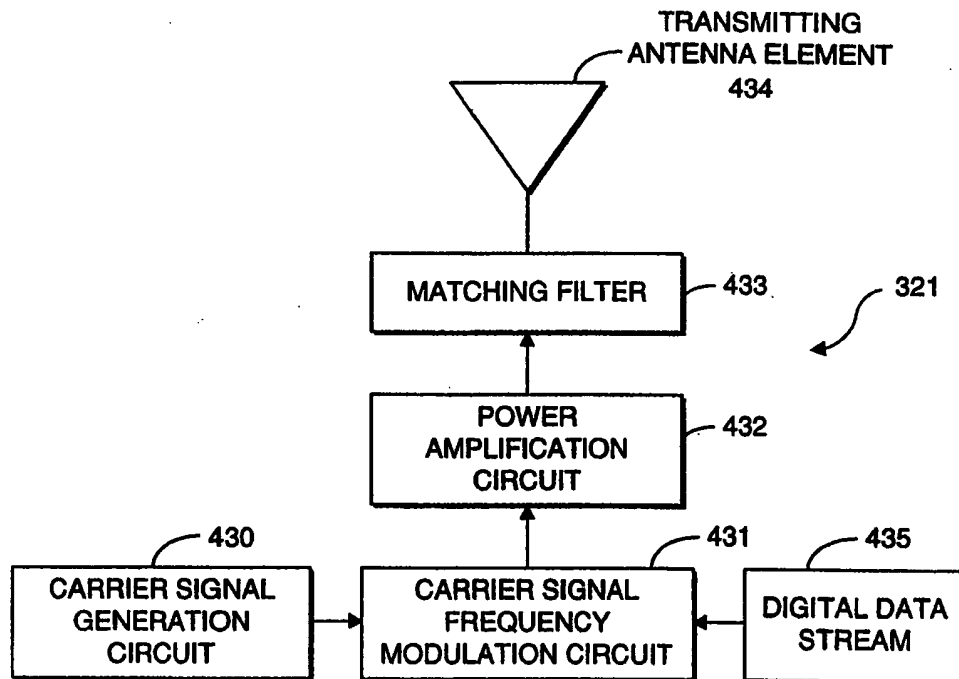


FIG. 16

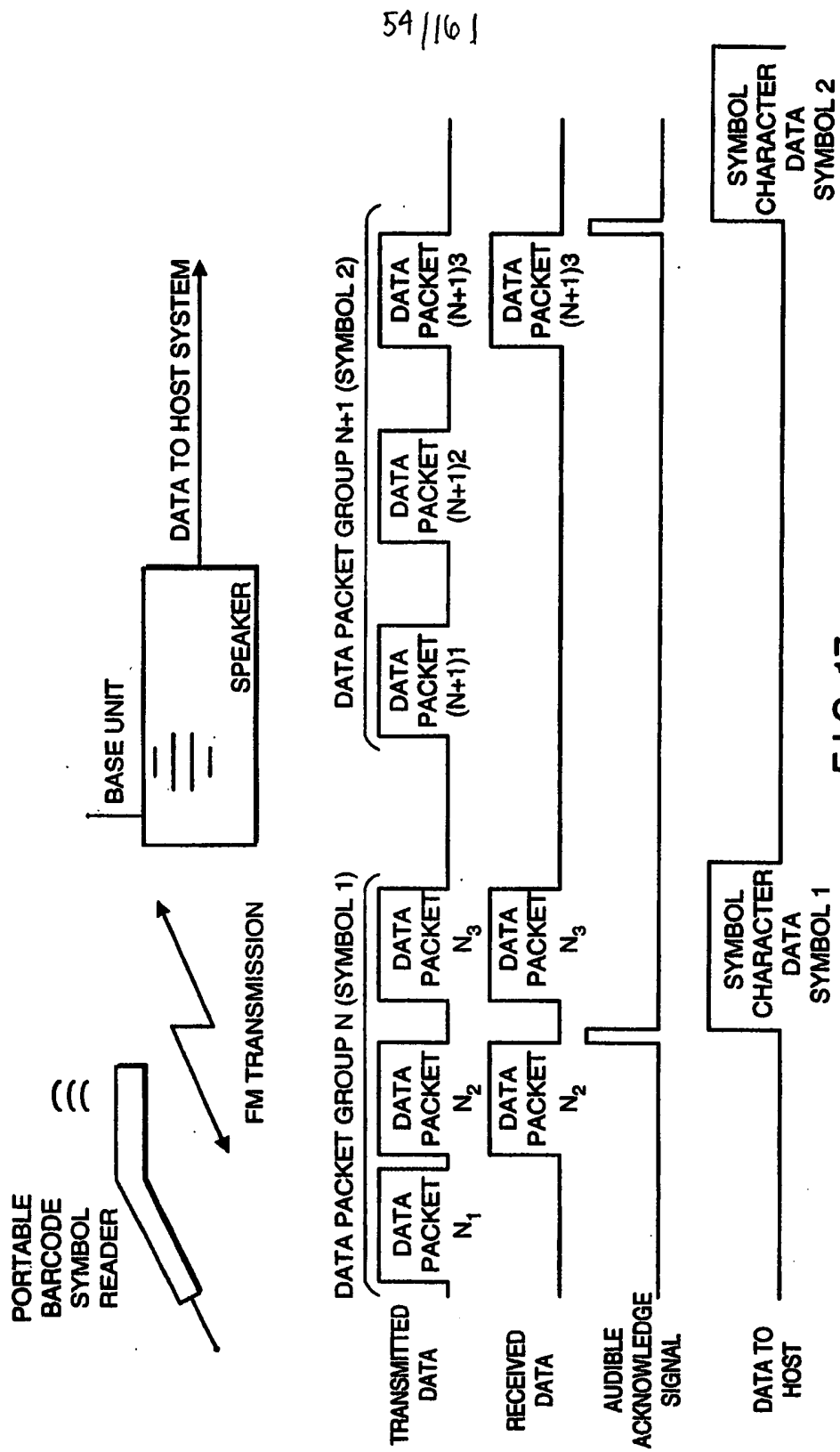
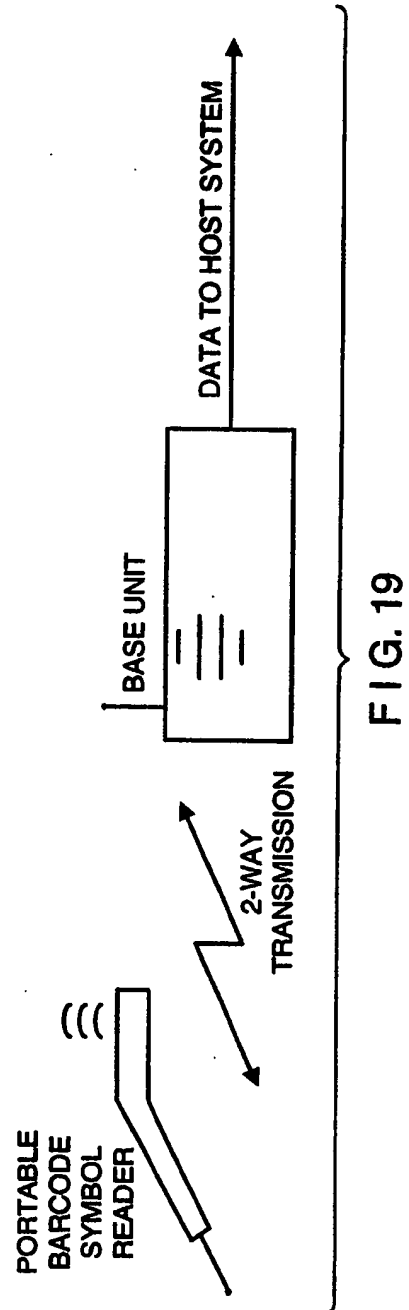
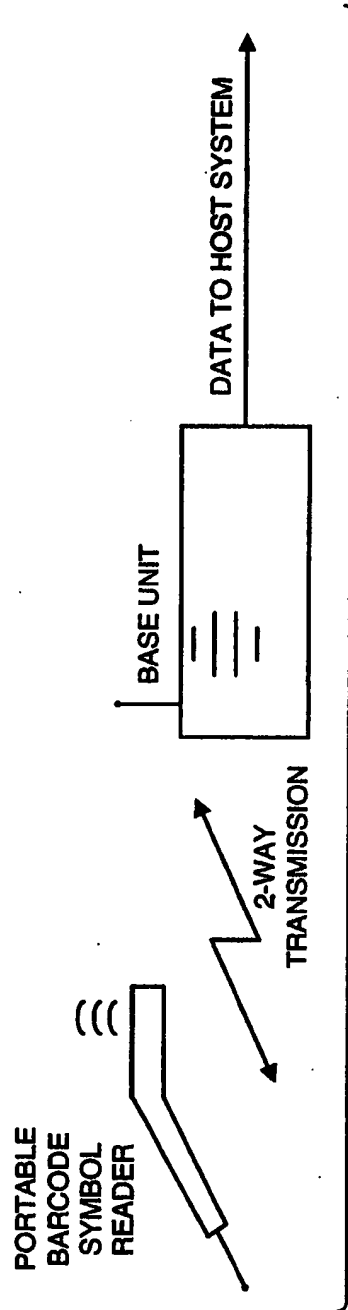


FIG. 17



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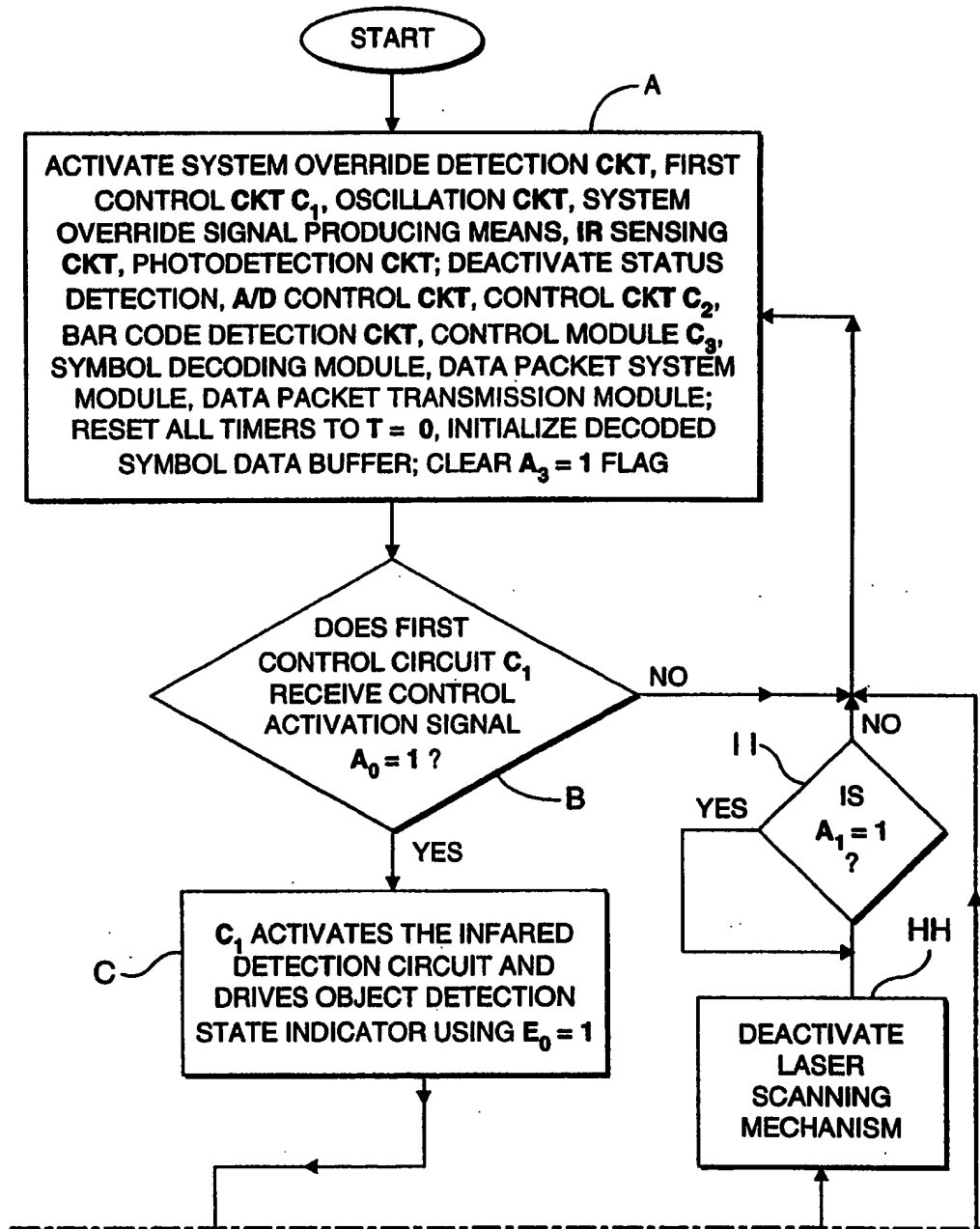
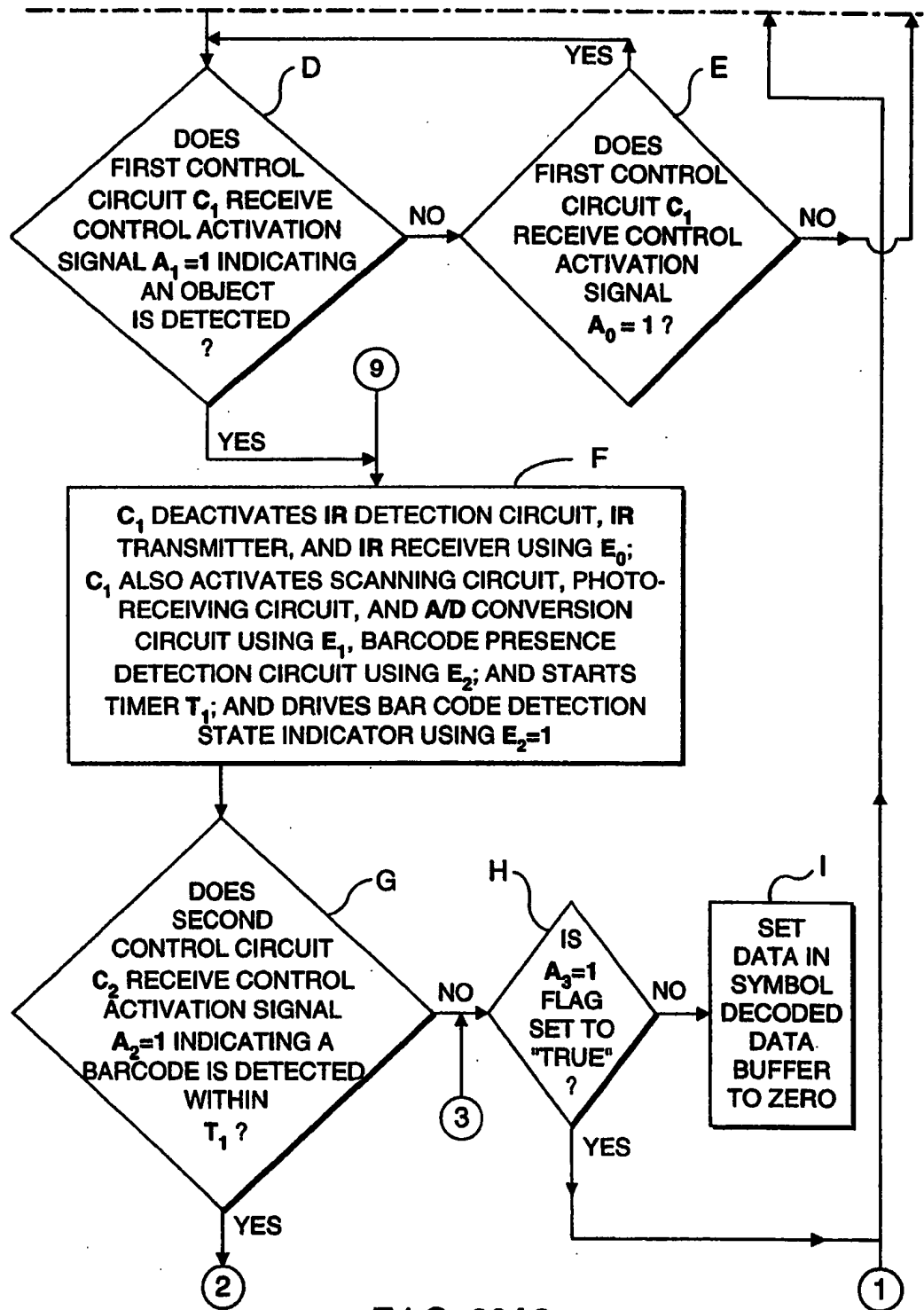


FIG. 20A1

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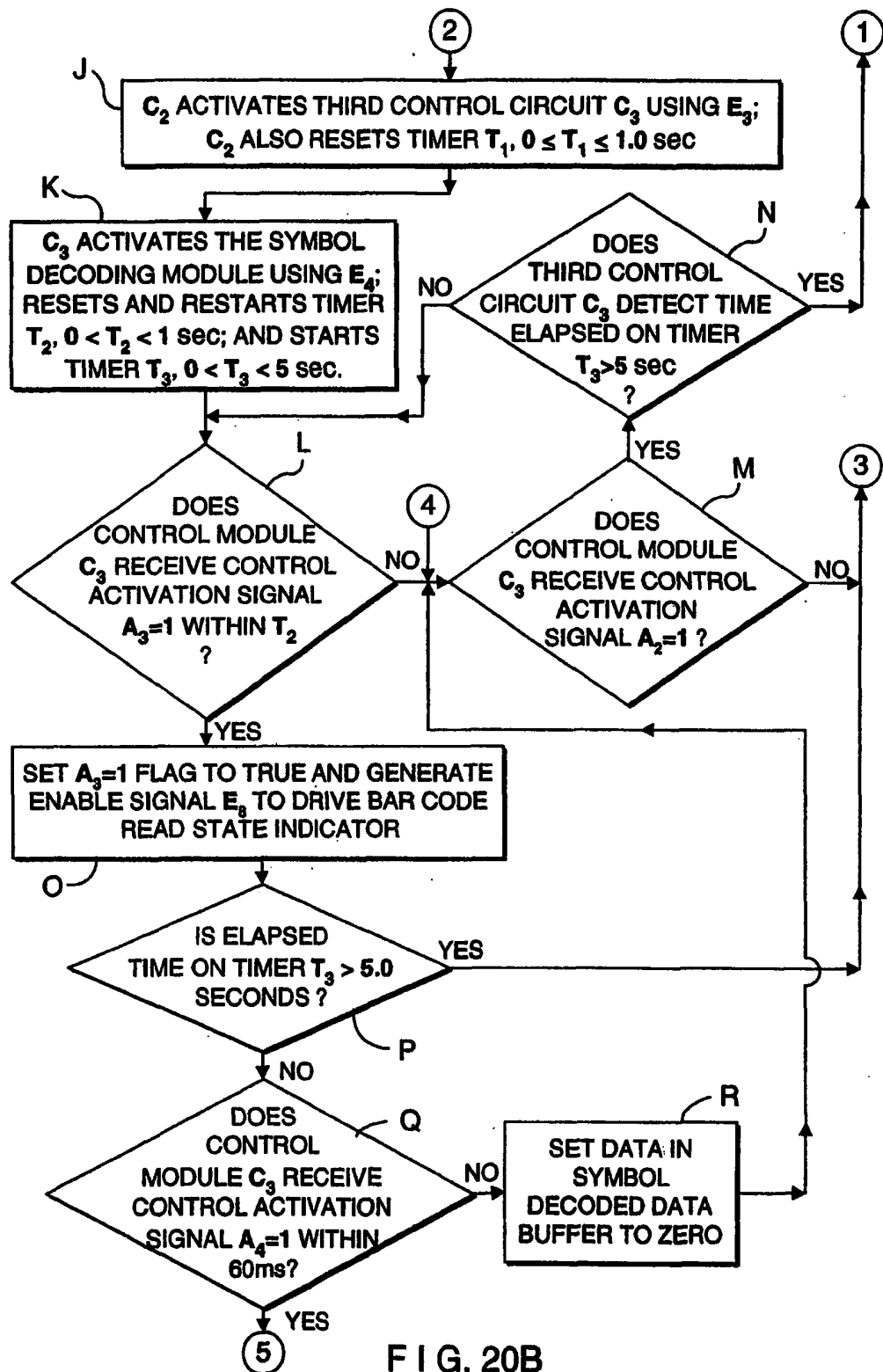


FIG. 20B

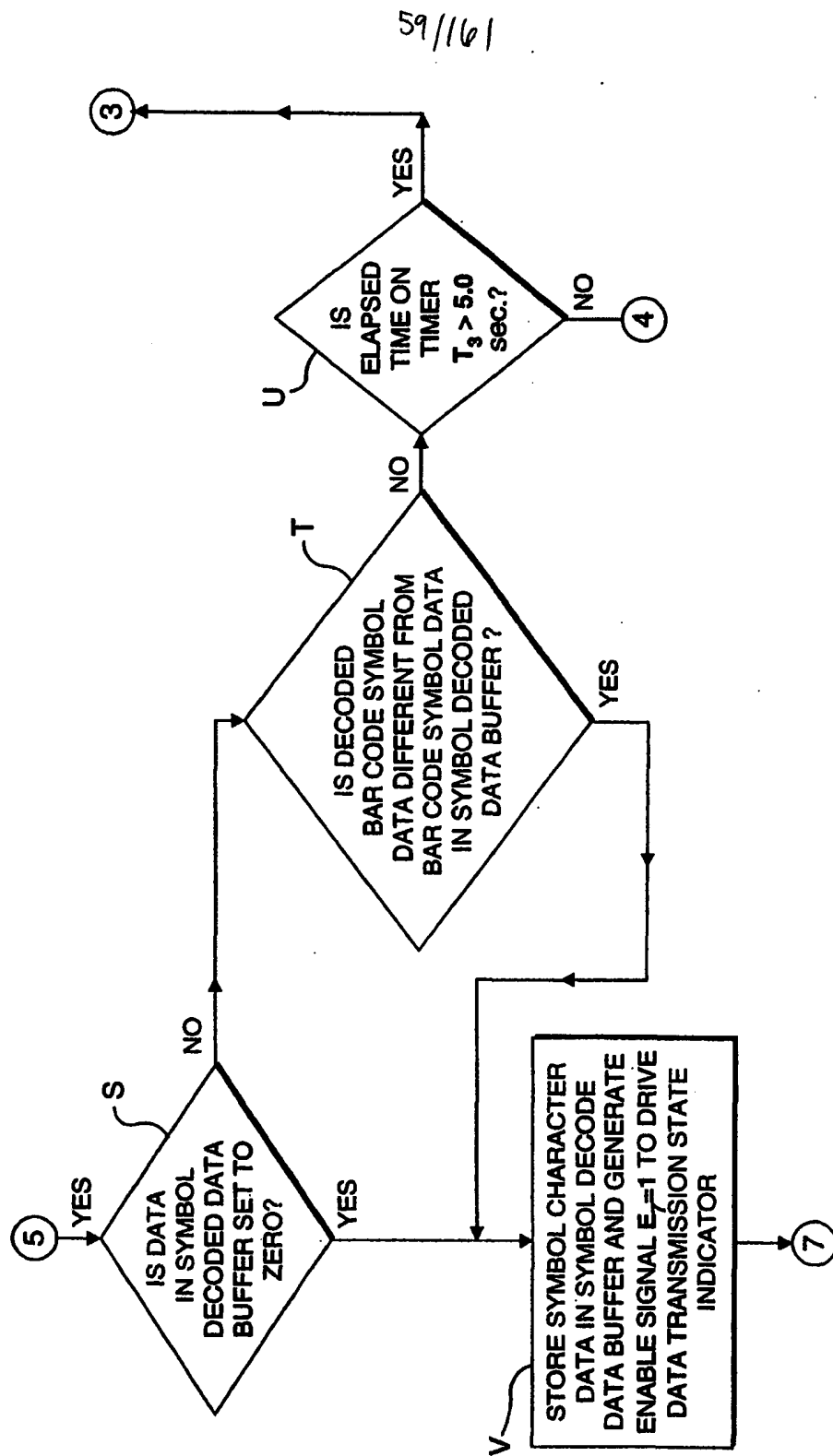


FIG. 20C

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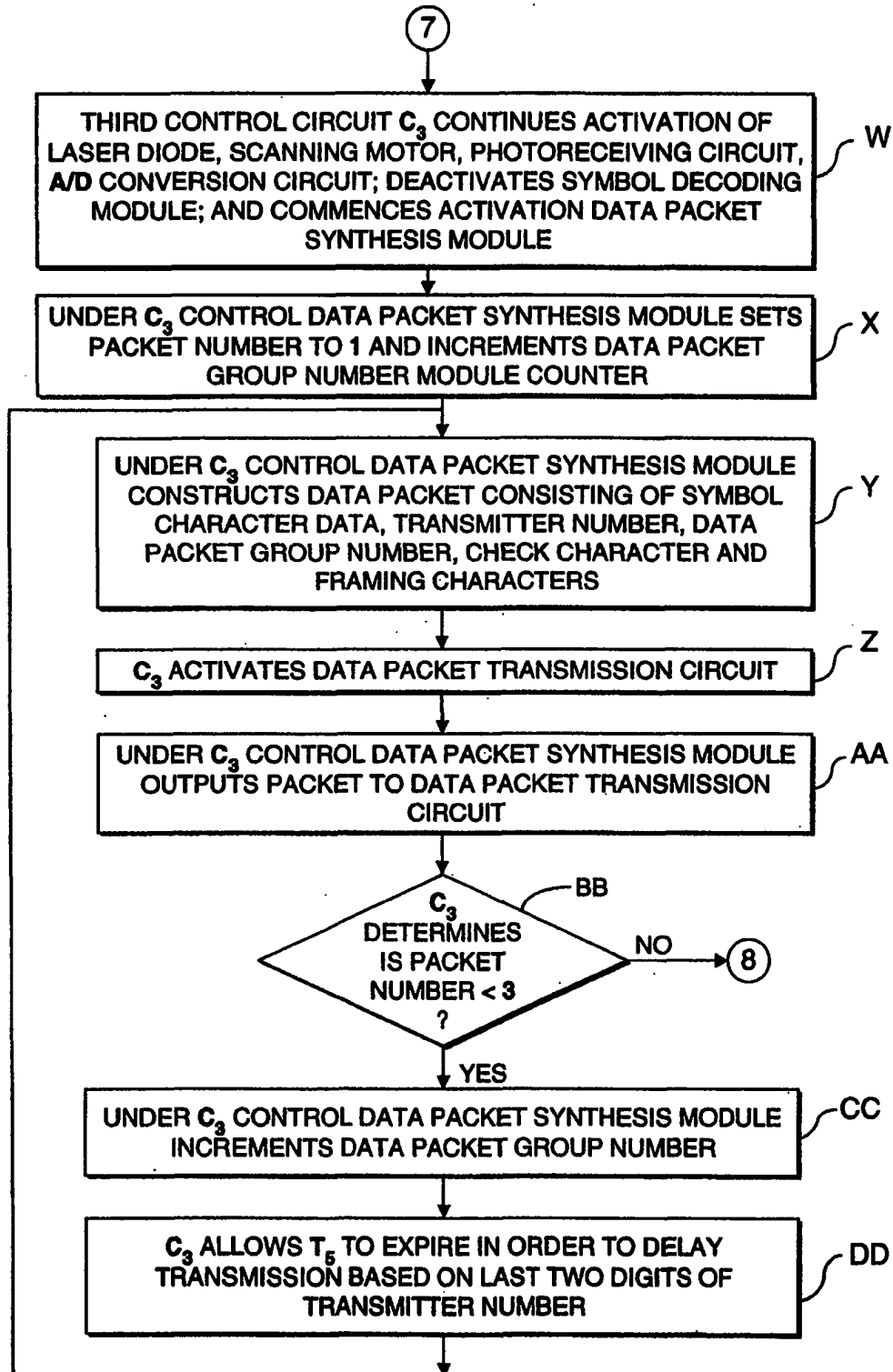


FIG. 20D

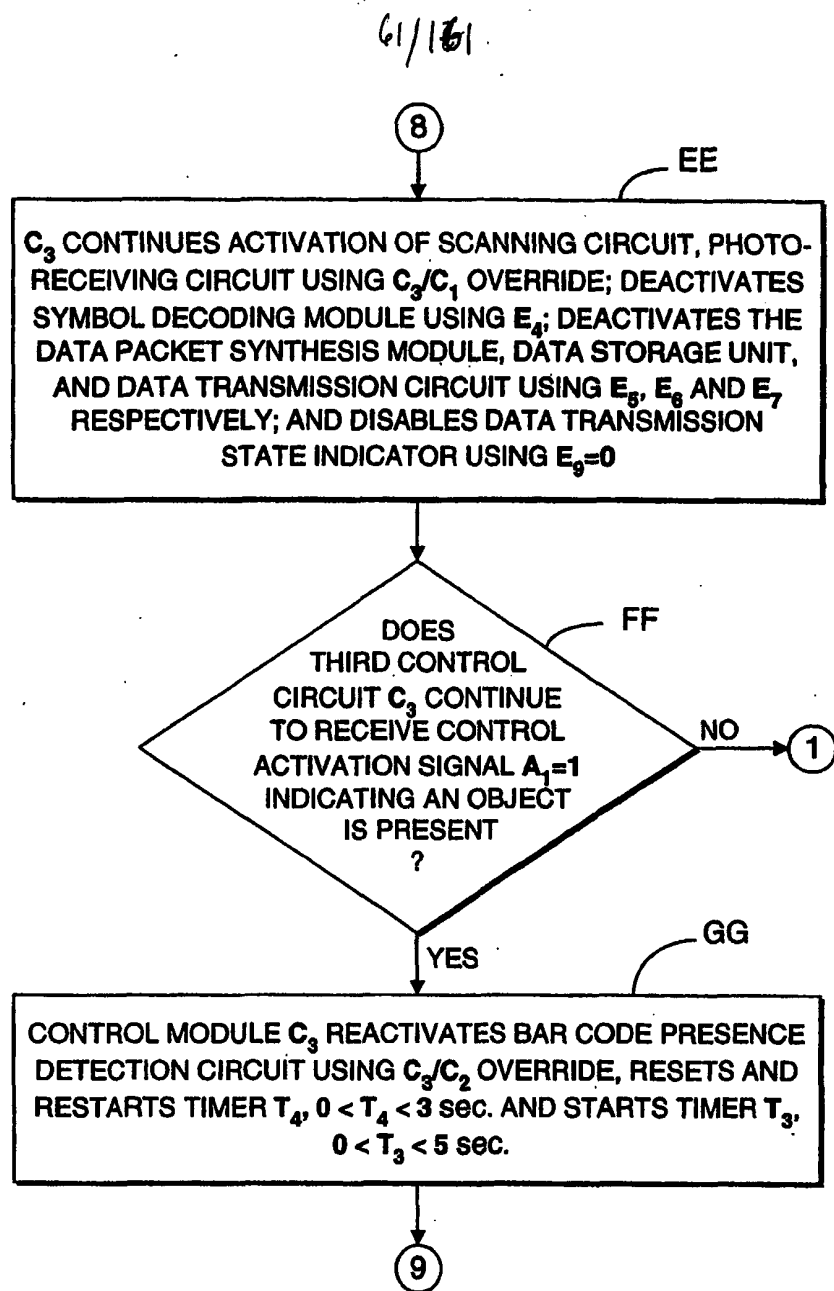


FIG. 20E

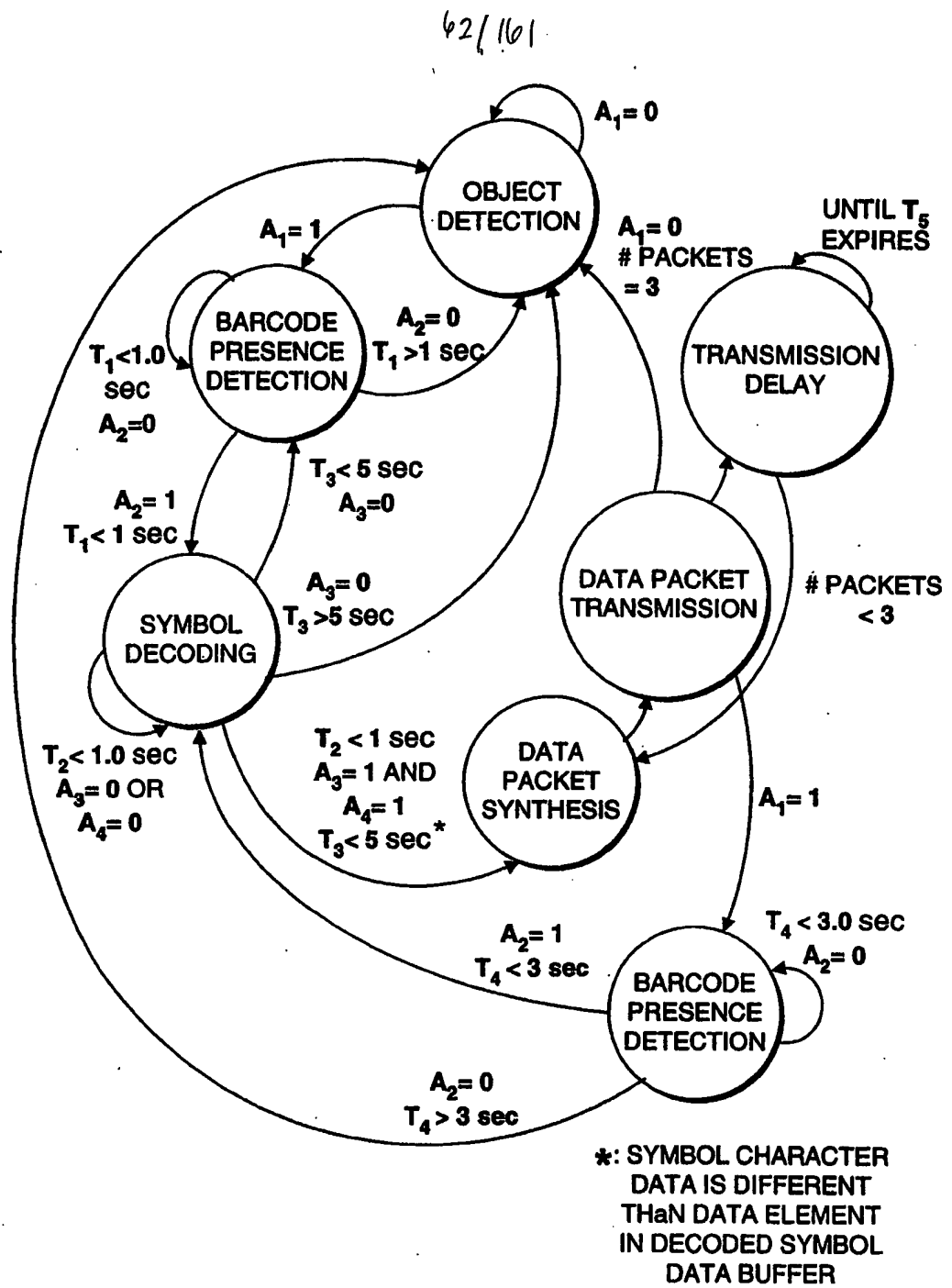


FIG. 21

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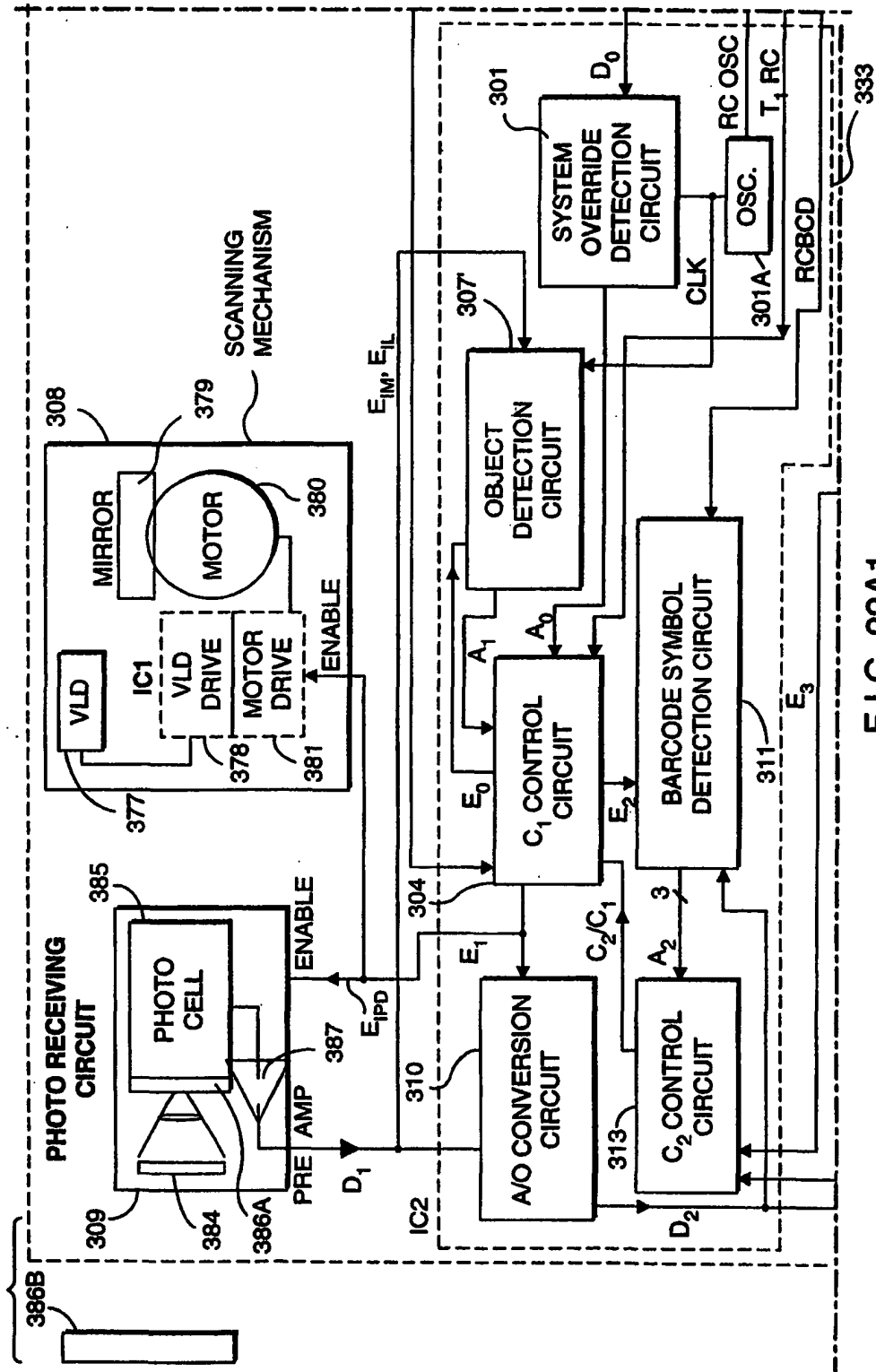


FIG. 22A1

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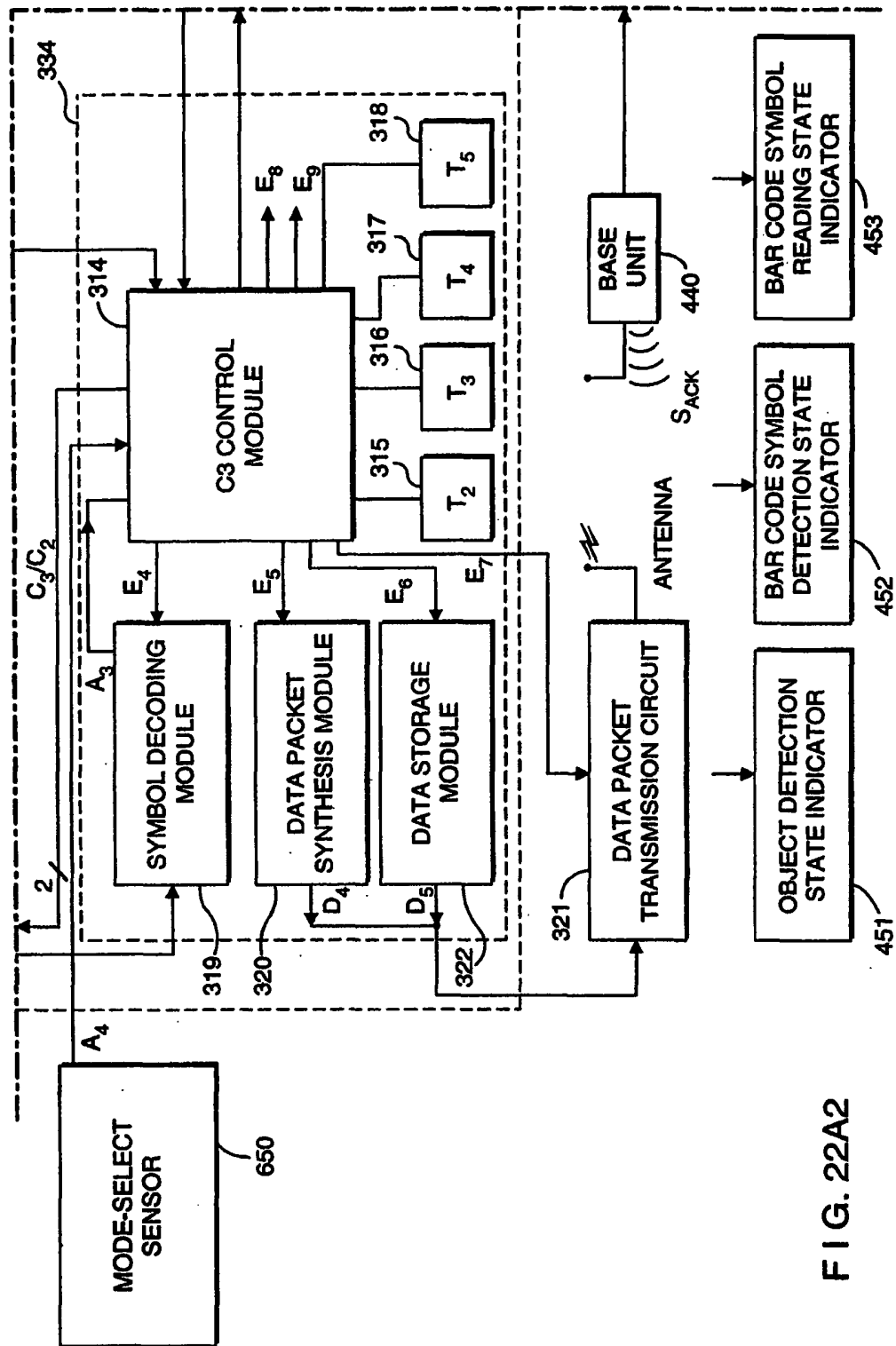


FIG. 22A2

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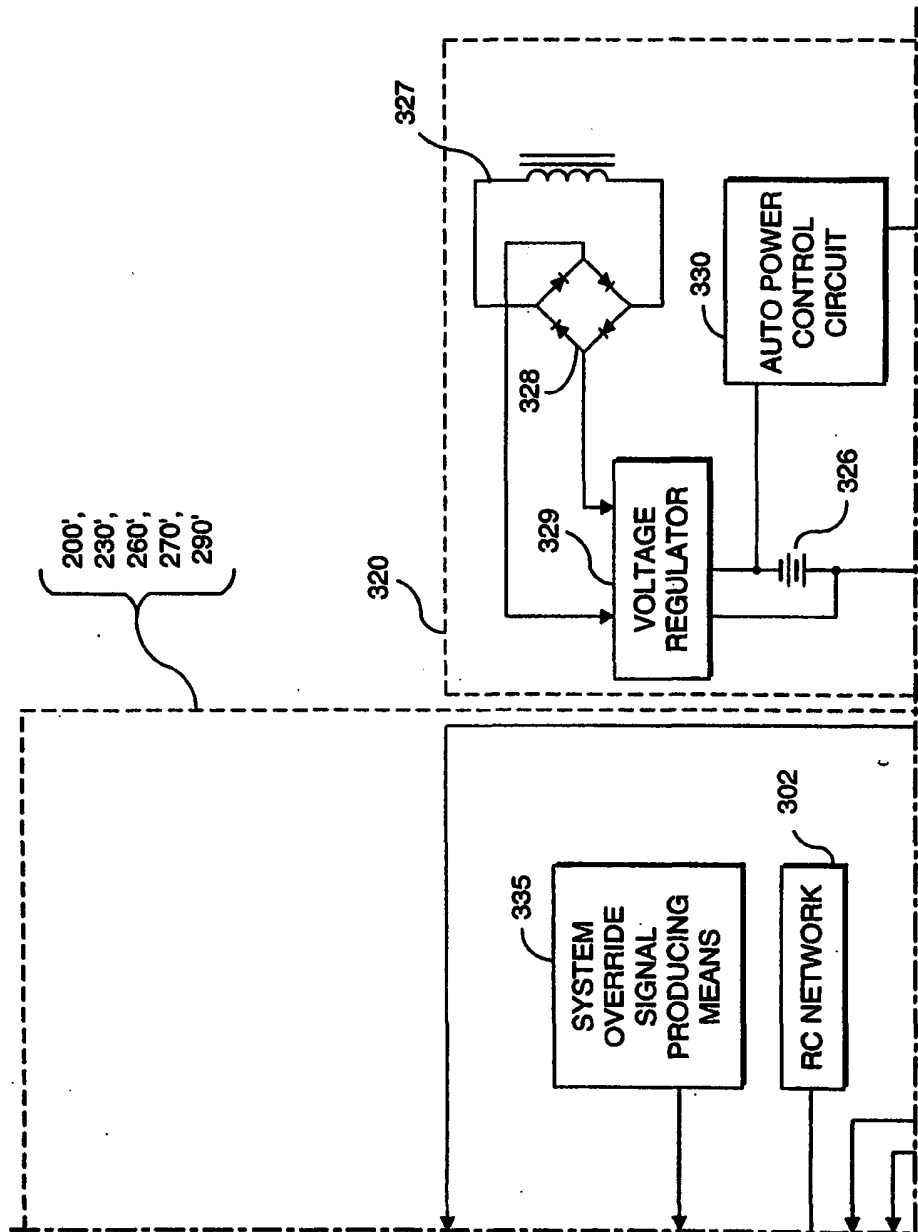


FIG. 22A3

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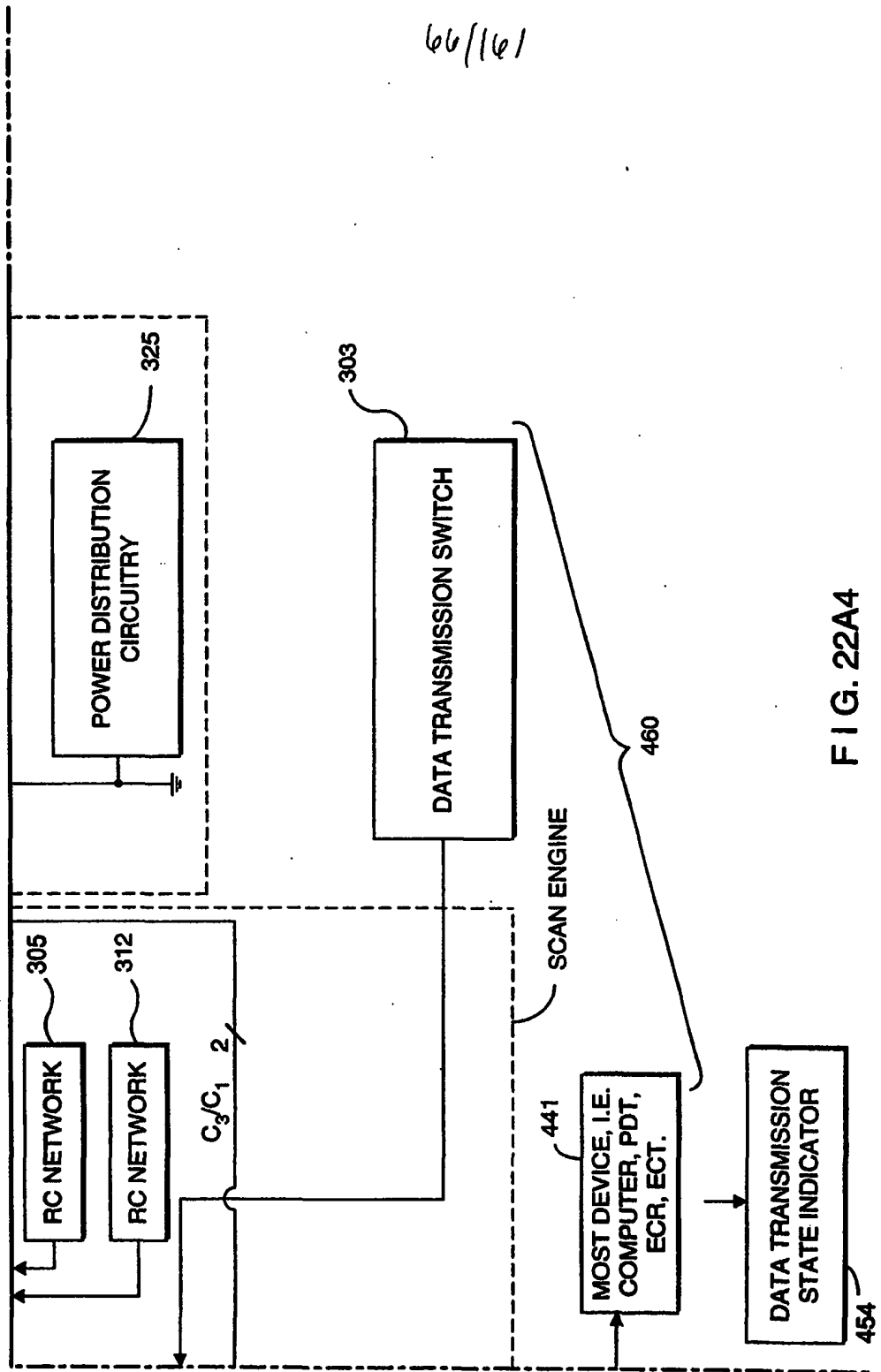


FIG. 22A4

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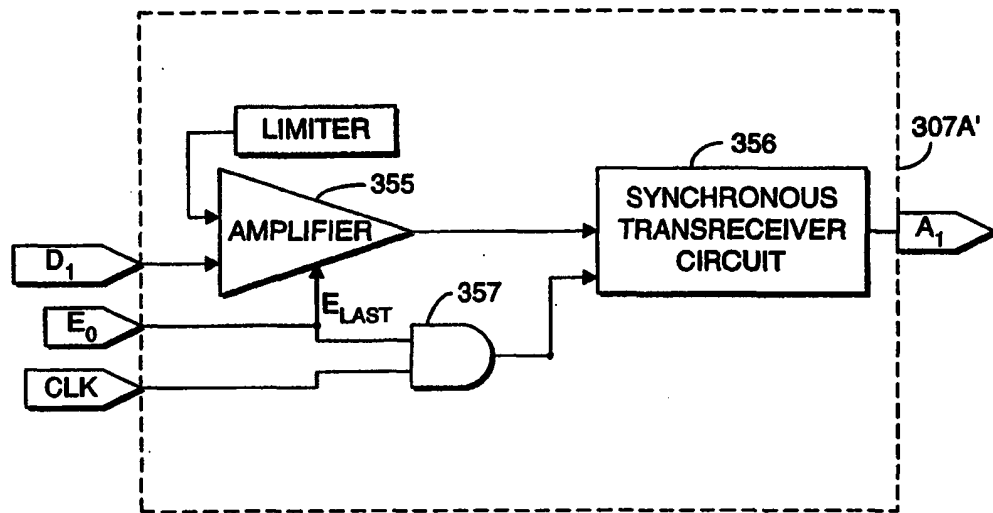


FIG. 22B

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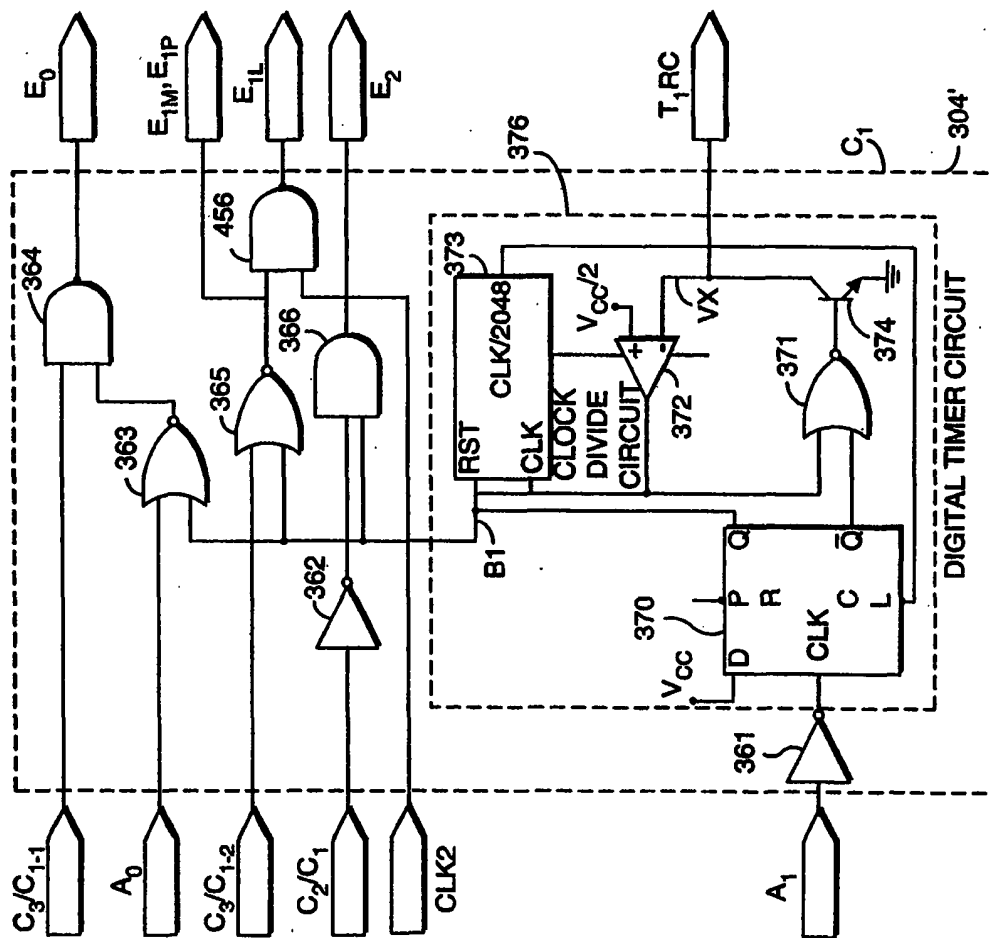


FIG. 22C

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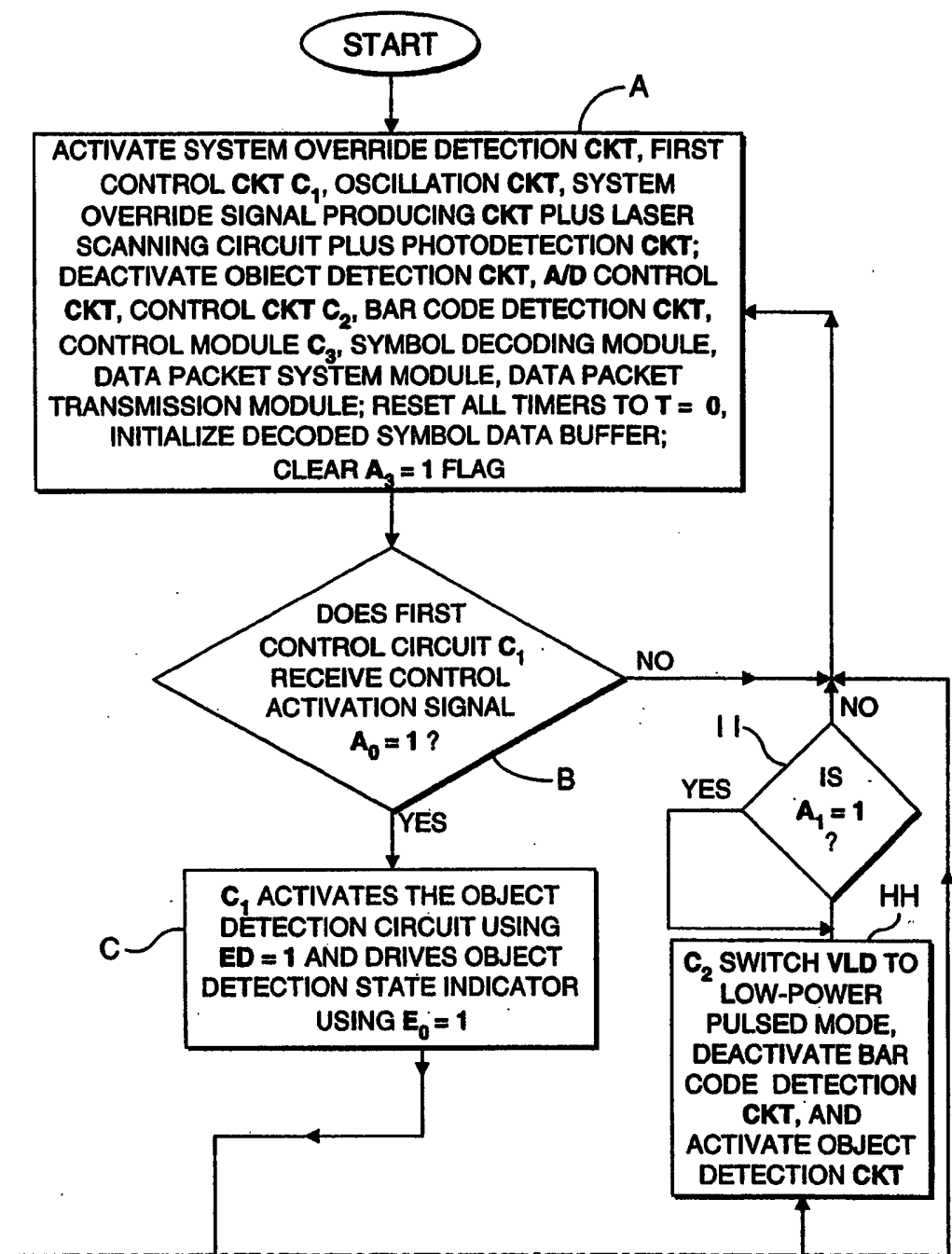


FIG. 23A1

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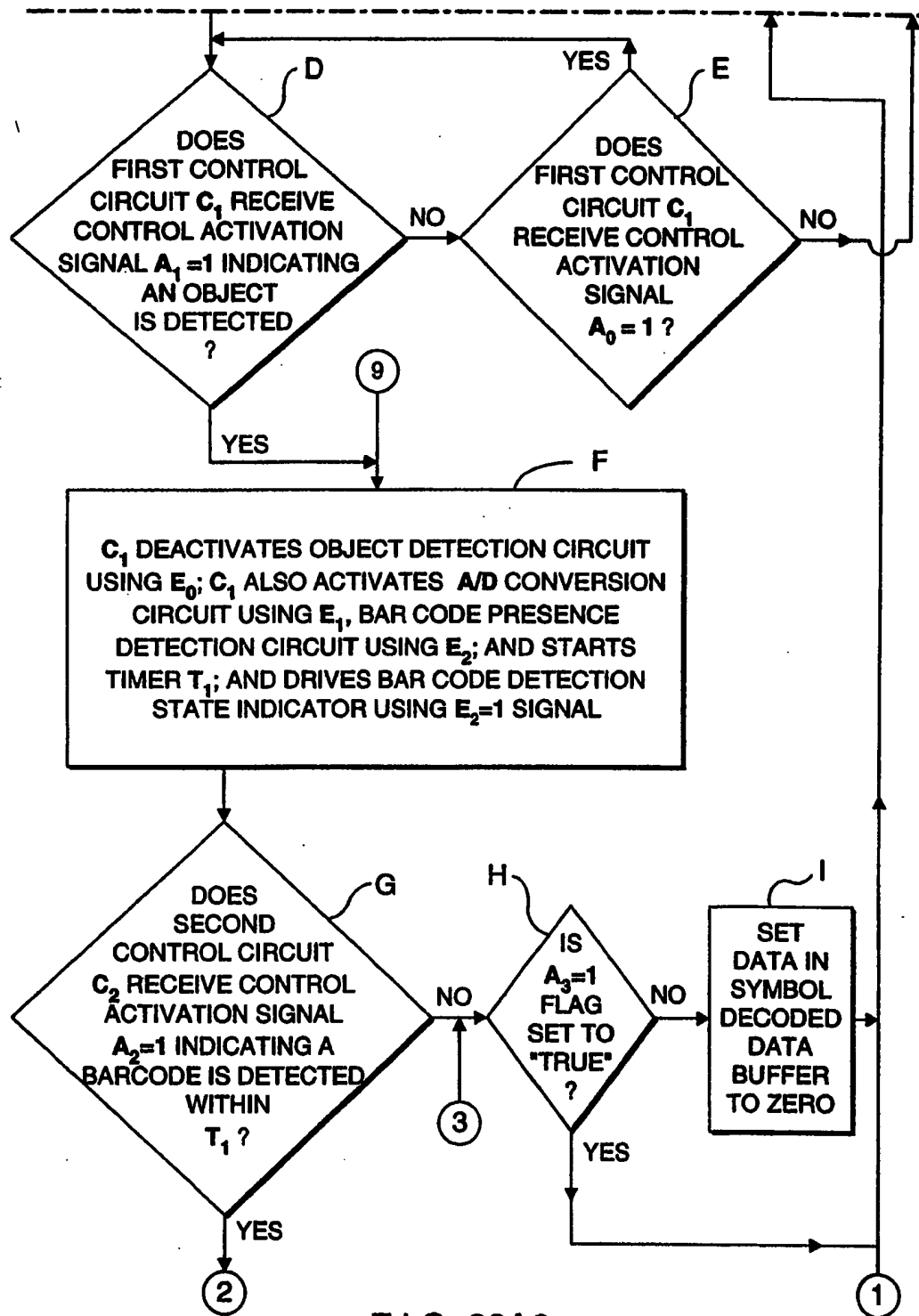
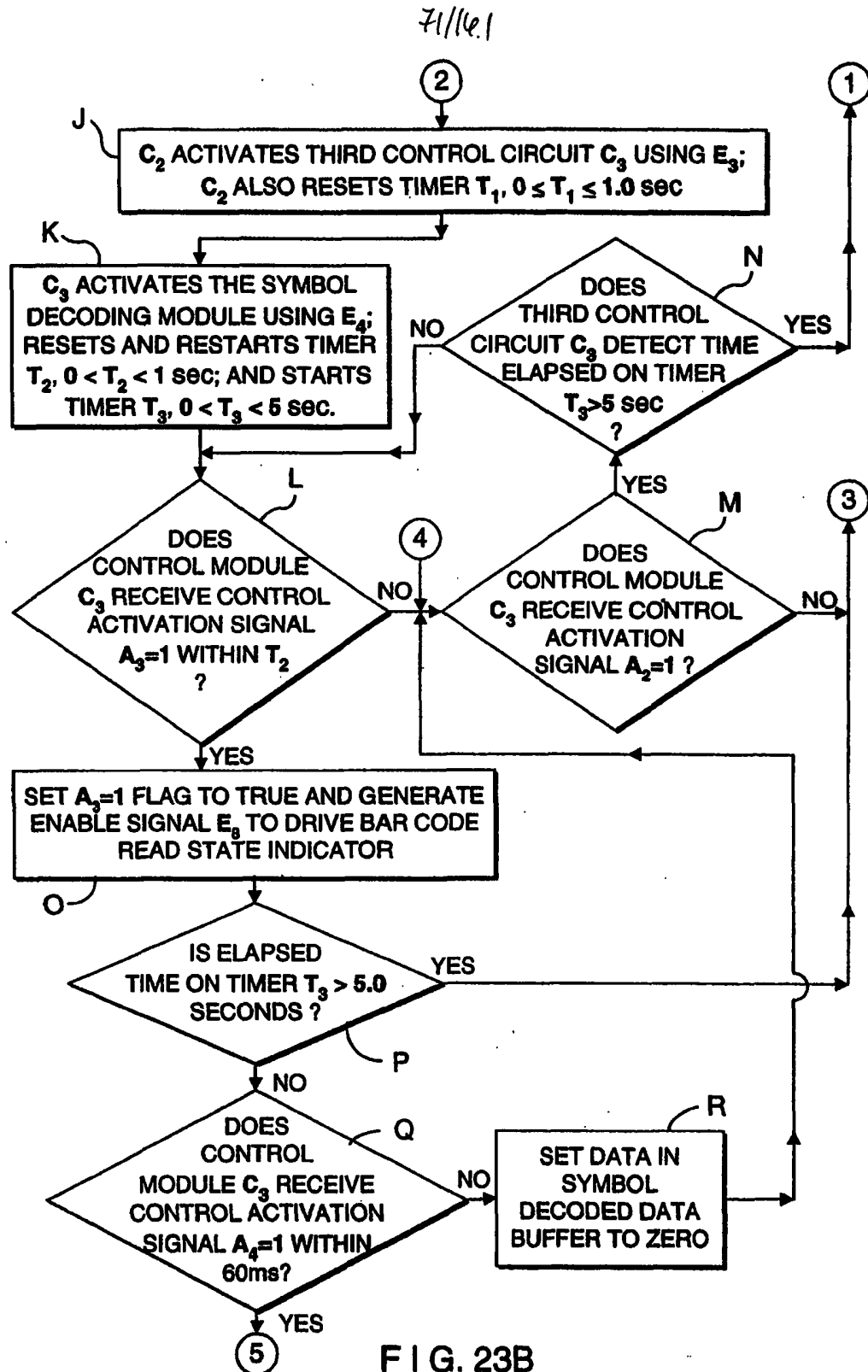


FIG. 23A2



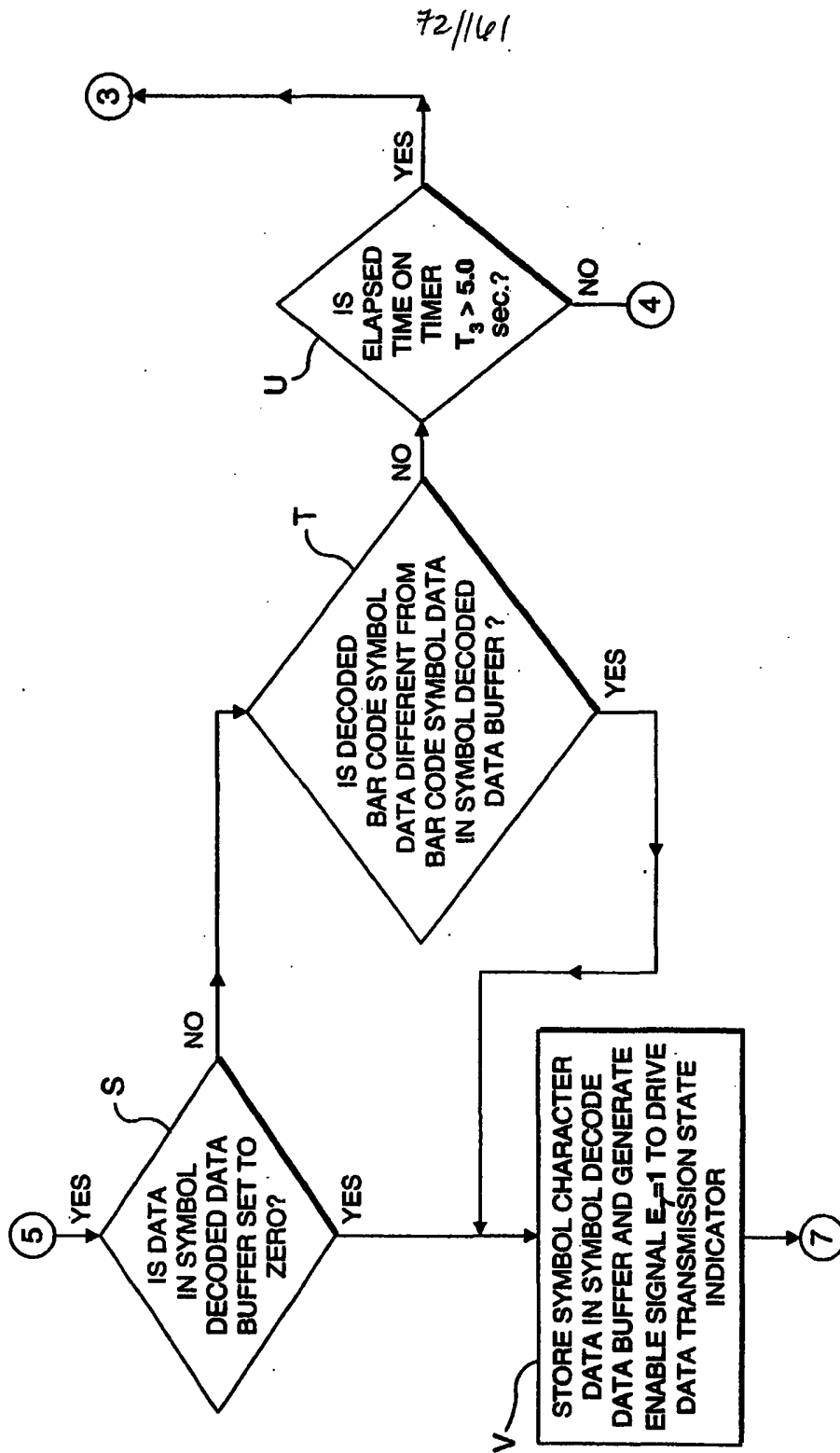


FIG. 23C

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7

THIRD CONTROL CIRCUIT C_3 CONTINUES ACTIVATION OF LASER DIODE, SCANNING MOTOR, PHOTORECEIVING CIRCUIT, A/D CONVERSION CIRCUIT; DEACTIVATES SYMBOL DECODING MODULE; AND COMMENCES ACTIVATION DATA PACKET SYNTHESIS MODULE

W

UNDER C_3 CONTROL DATA PACKET SYNTHESIS MODULE SETS PACKET NUMBER TO 1 AND INCREMENTS DATA PACKET GROUP NUMBER MODULE COUNTER

X

UNDER C_3 CONTROL DATA PACKET SYNTHESIS MODULE CONSTRUCTS DATA PACKET CONSISTING OF SYMBOL CHARACTER DATA, TRANSMITTER NUMBER, DATA PACKET GROUP NUMBER, CHECK CHARACTER AND FRAMING CHARACTERS

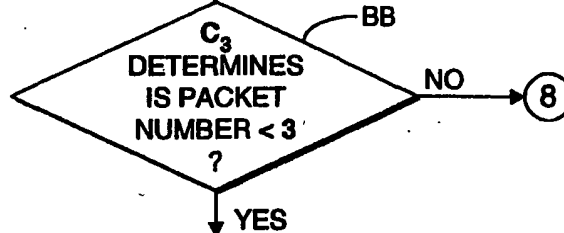
Y

C_3 ACTIVATES DATA PACKET TRANSMISSION CIRCUIT

Z

UNDER C_3 CONTROL DATA PACKET SYNTHESIS MODULE OUTPUTS PACKET TO DATA PACKET TRANSMISSION CIRCUIT

AA



UNDER C_3 CONTROL DATA PACKET SYNTHESIS MODULE INCREMENTS DATA PACKET GROUP NUMBER

CC

C_3 ALLOWS T_5 TO EXPIRE IN ORDER TO DELAY TRANSMISSION BASED ON LAST TWO DIGITS OF TRANSMITTER NUMBER

DD

FIG. 23D

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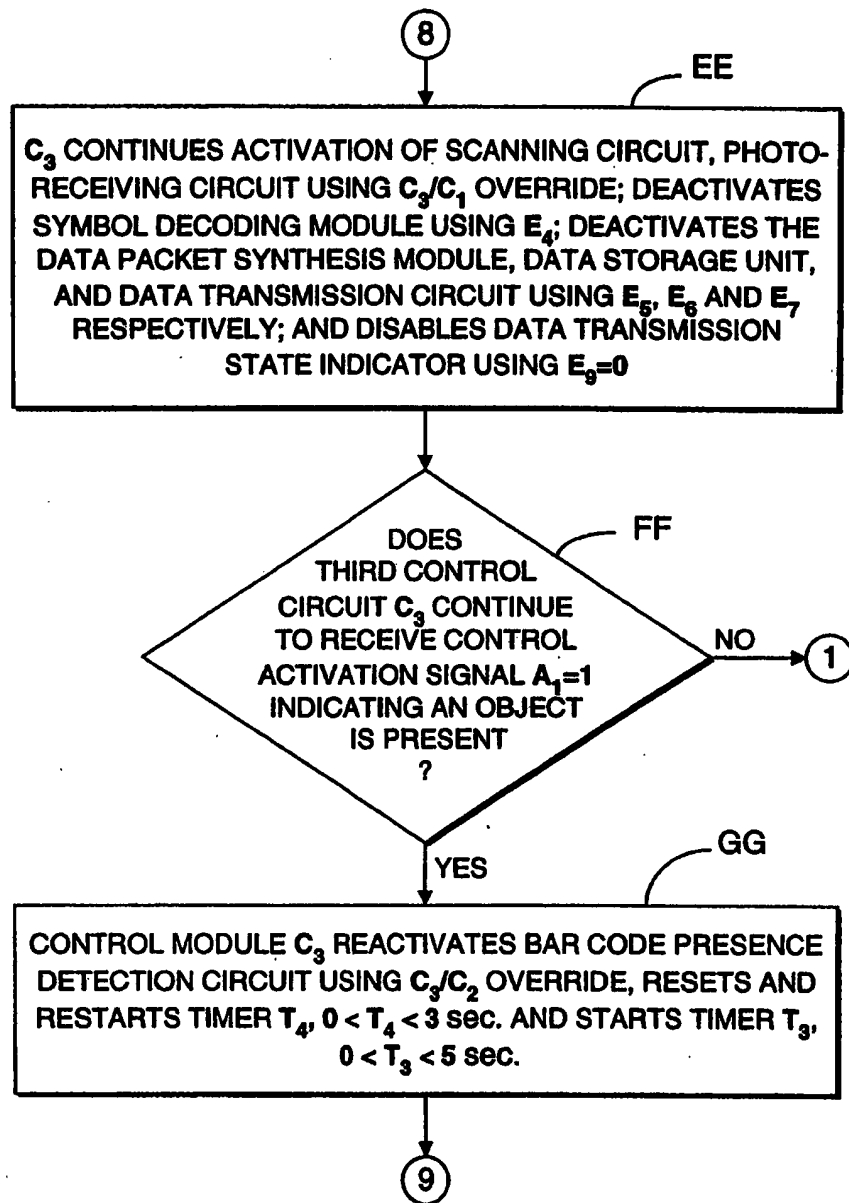


FIG. 23E

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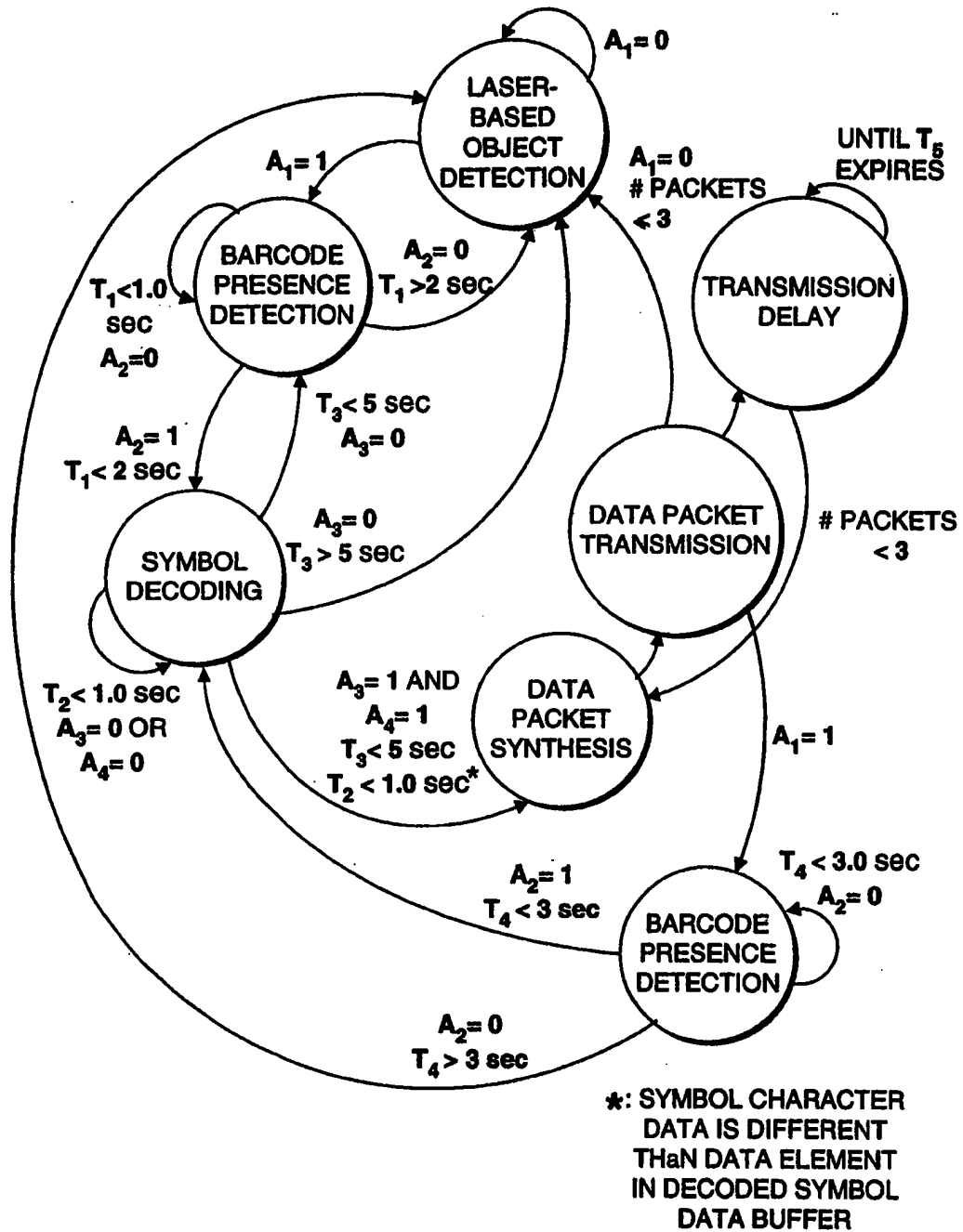


FIG. 24

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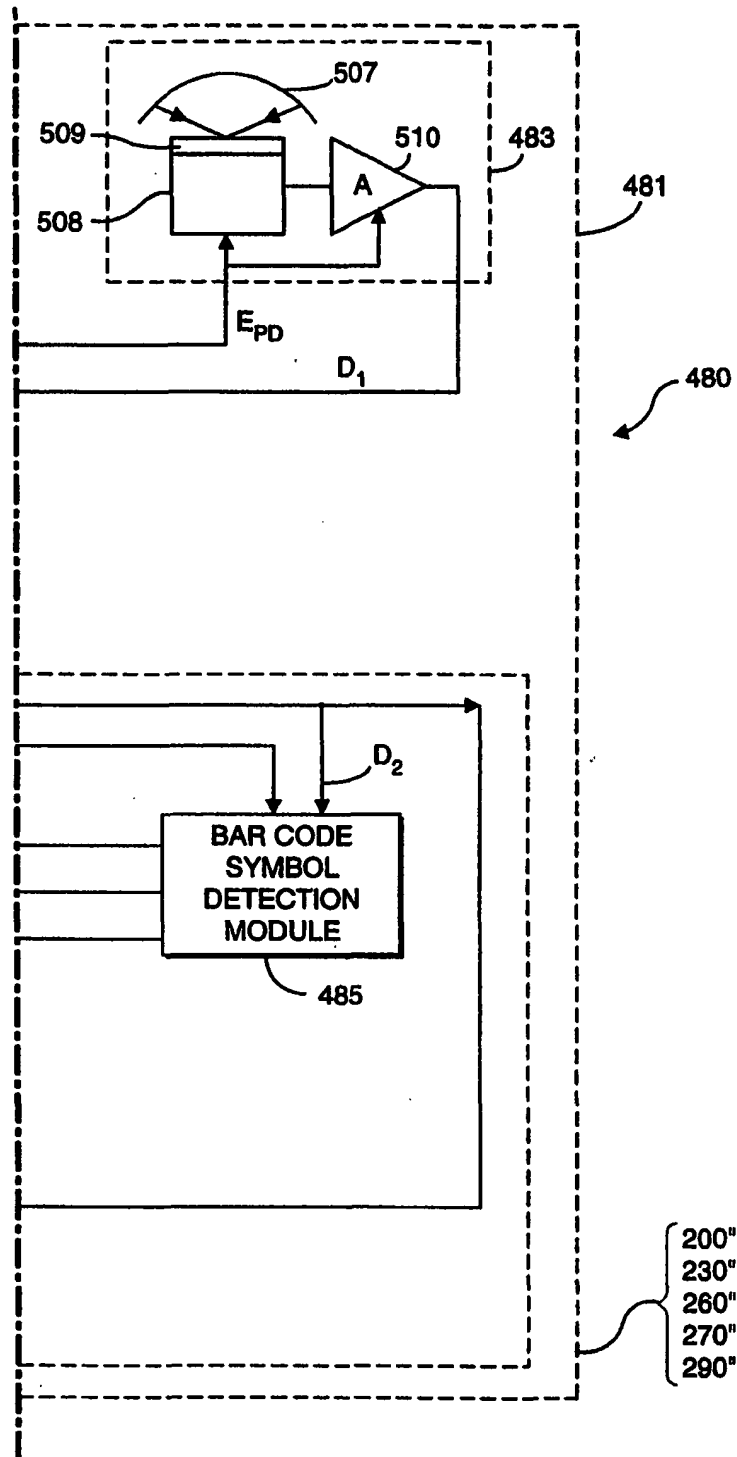


FIG. 25B

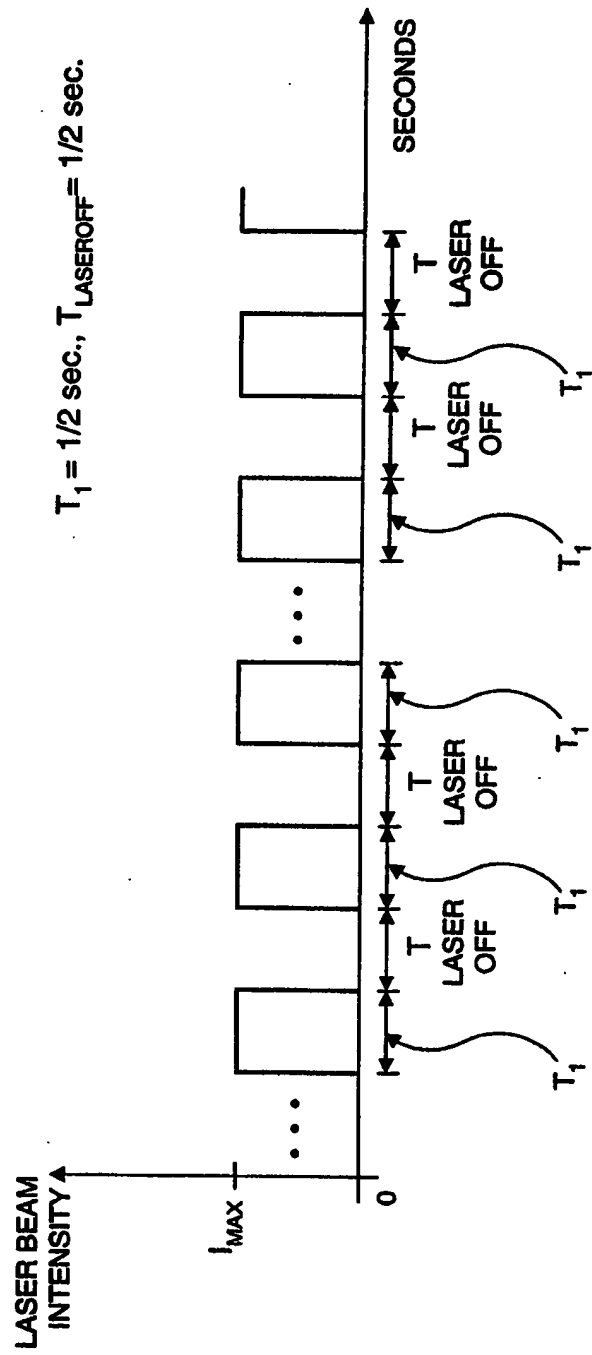
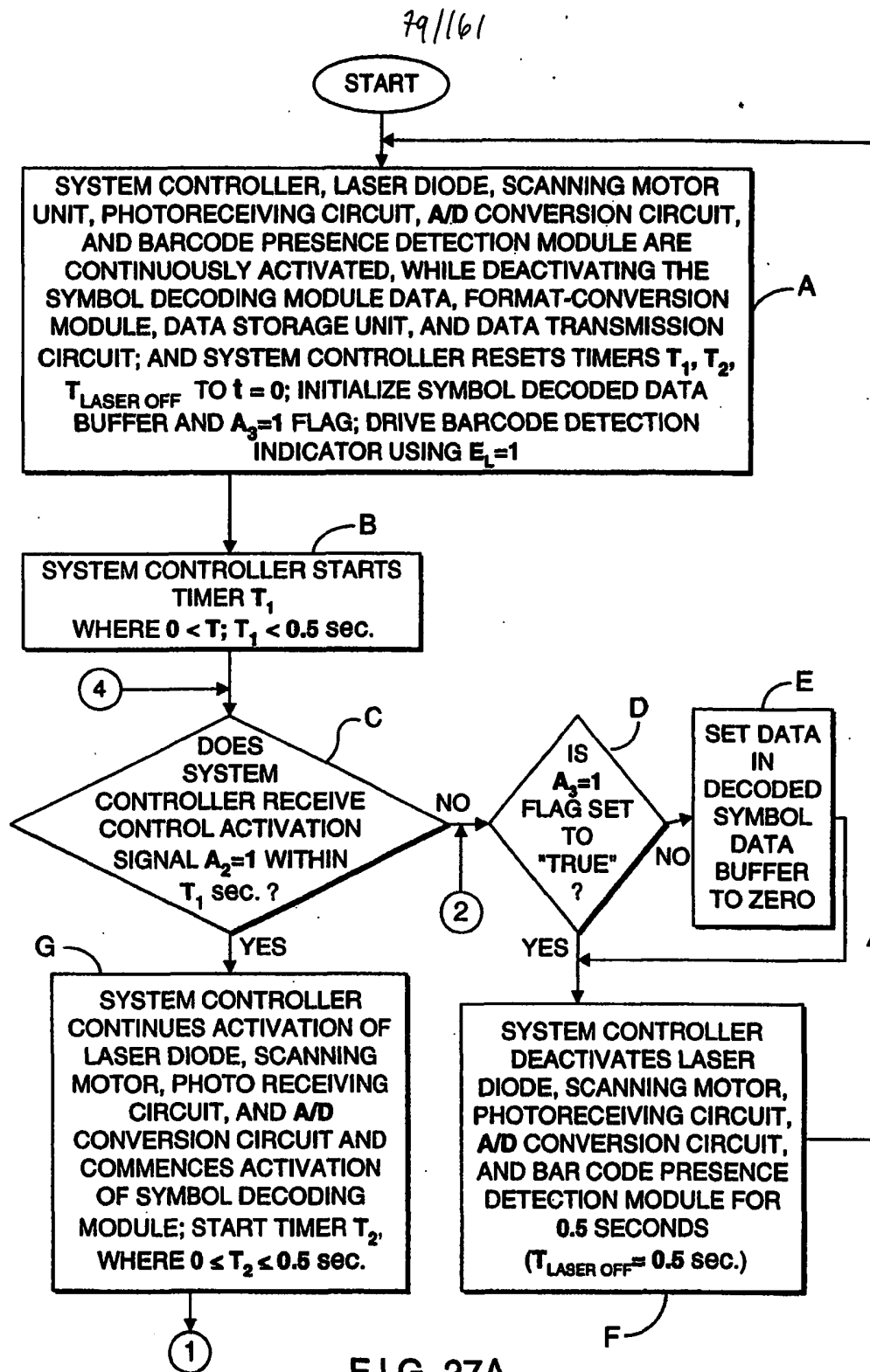


FIG. 26

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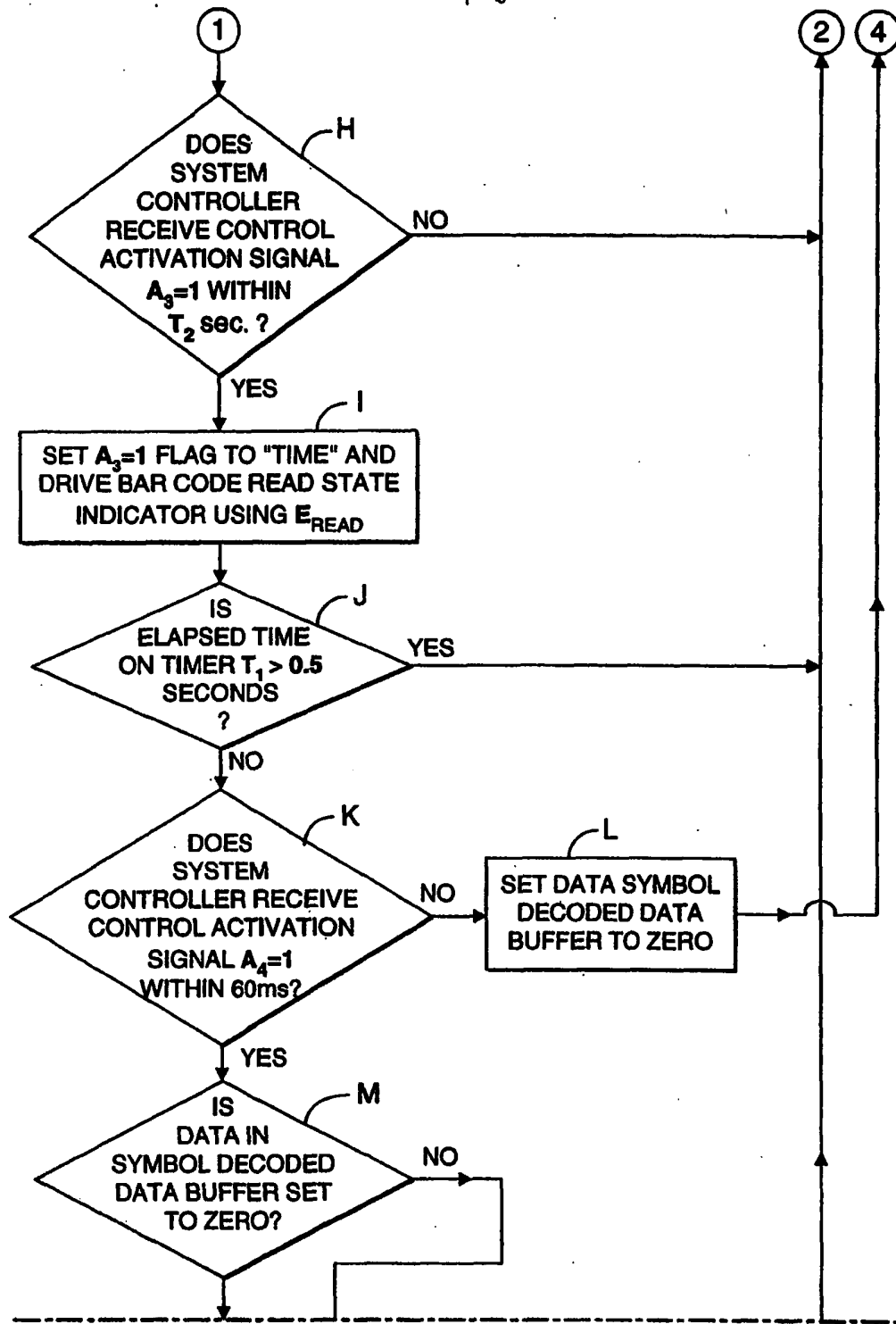


FIG. 27B1

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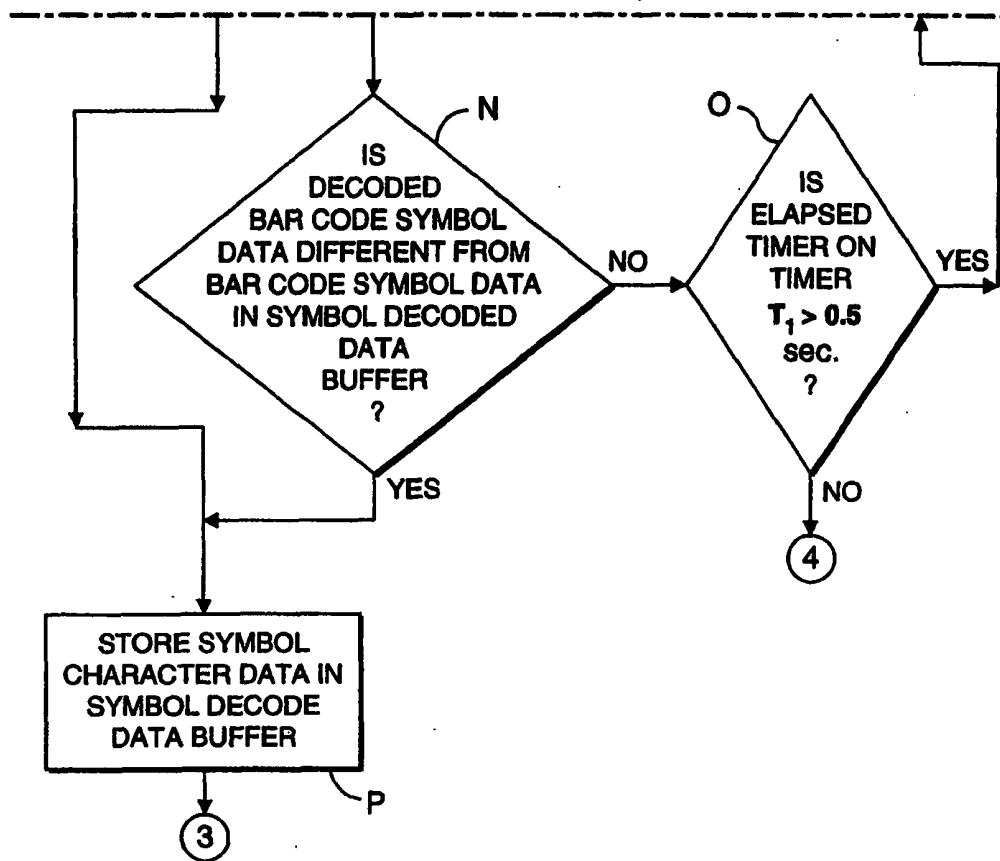


FIG. 27B2

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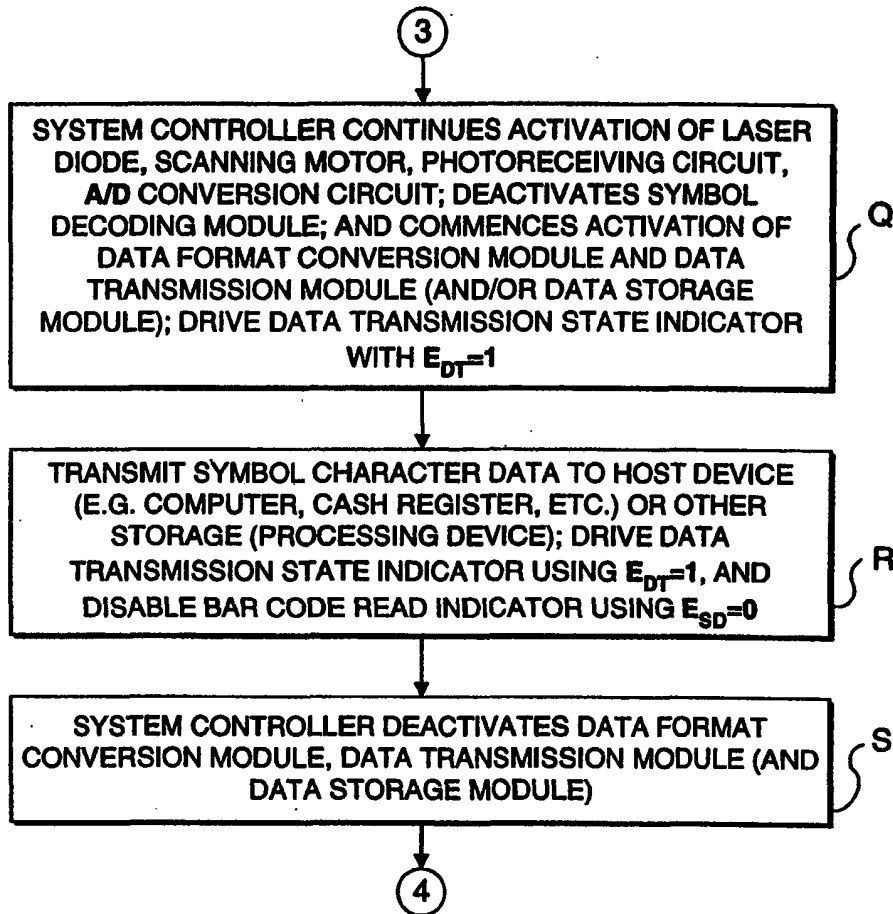
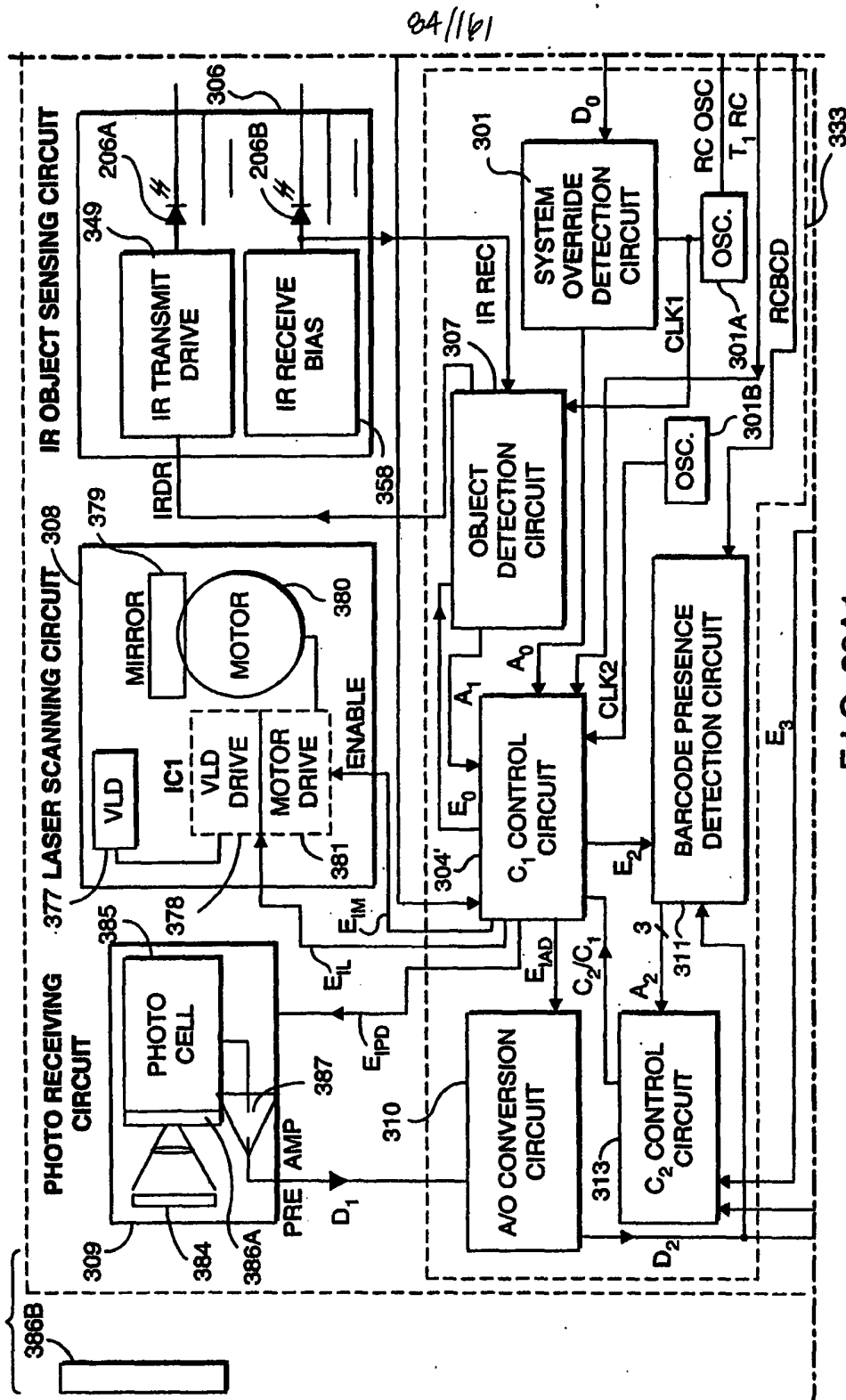


FIG. 27C

```
graph TD
    LASER_OFF((LASER OFF))
    BAR_CODE_SYMBOL_PRESENCE_DETECTION((BAR CODE SYMBOL PRESENCE DETECTION))
    BAR_CODE_SYMBOL_DECODING((BAR CODE SYMBOL DECODING))
    DATA_PACKET_TRANSMISSION_N((DATA PACKET TRANSMISSION N))

    LASER_OFF -- "UNTIL T_LASER OFF EXPIRES" --> LASER_OFF
    LASER_OFF -- "T1 > 0.5 sec, A2 = 0" --> BAR_CODE_SYMBOL_PRESENCE_DETECTION
    BAR_CODE_SYMBOL_PRESENCE_DETECTION -- "T1 < 0.5 sec, A2 = 0" --> BAR_CODE_SYMBOL_PRESENCE_DETECTION
    BAR_CODE_SYMBOL_PRESENCE_DETECTION -- "A2 = 1, T1 < 0.5 sec" --> BAR_CODE_SYMBOL_DECODING
    BAR_CODE_SYMBOL_DECODING -- "T2 > 0.5 sec, A3 = 0 OR A4 = 0" --> LASER_OFF
    BAR_CODE_SYMBOL_DECODING -- "T2 < 0.5 sec, A3 = 0 OR A4 = 0" --> BAR_CODE_SYMBOL_DECODING
    BAR_CODE_SYMBOL_DECODING -- "A3 = 1, A4 = 1, T2 < 0.5 sec*" --> DATA_PACKET_TRANSMISSION_N
    DATA_PACKET_TRANSMISSION_N -- "DURING DATA PACKET TRANSMISSION" --> DATA_PACKET_TRANSMISSION_N
    DATA_PACKET_TRANSMISSION_N -- "DATA PACKET TRANSMISSION COMPLETED" --> BAR_CODE_SYMBOL_PRESENCE_DETECTION
```

FIG. 28



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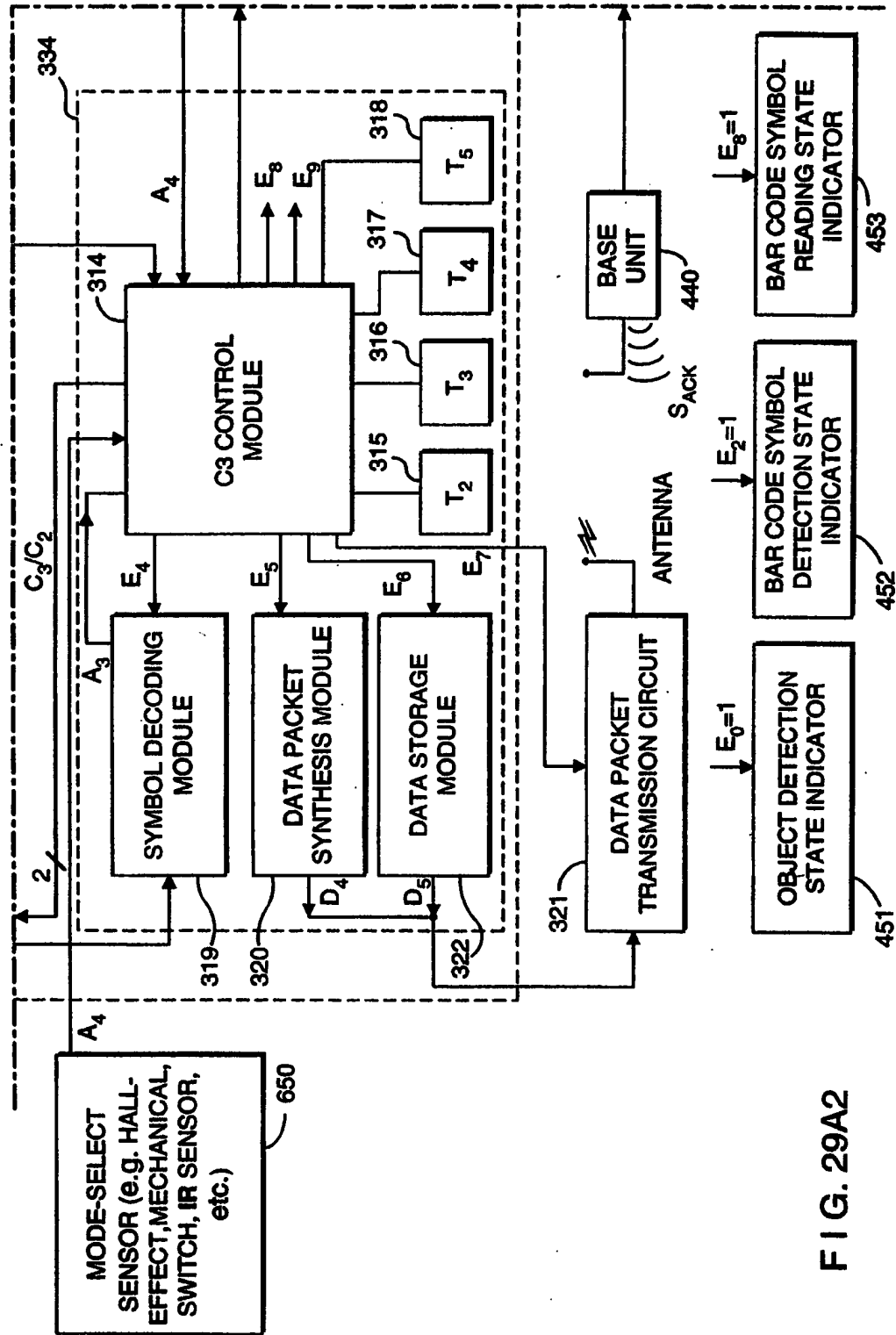


FIG. 29A2

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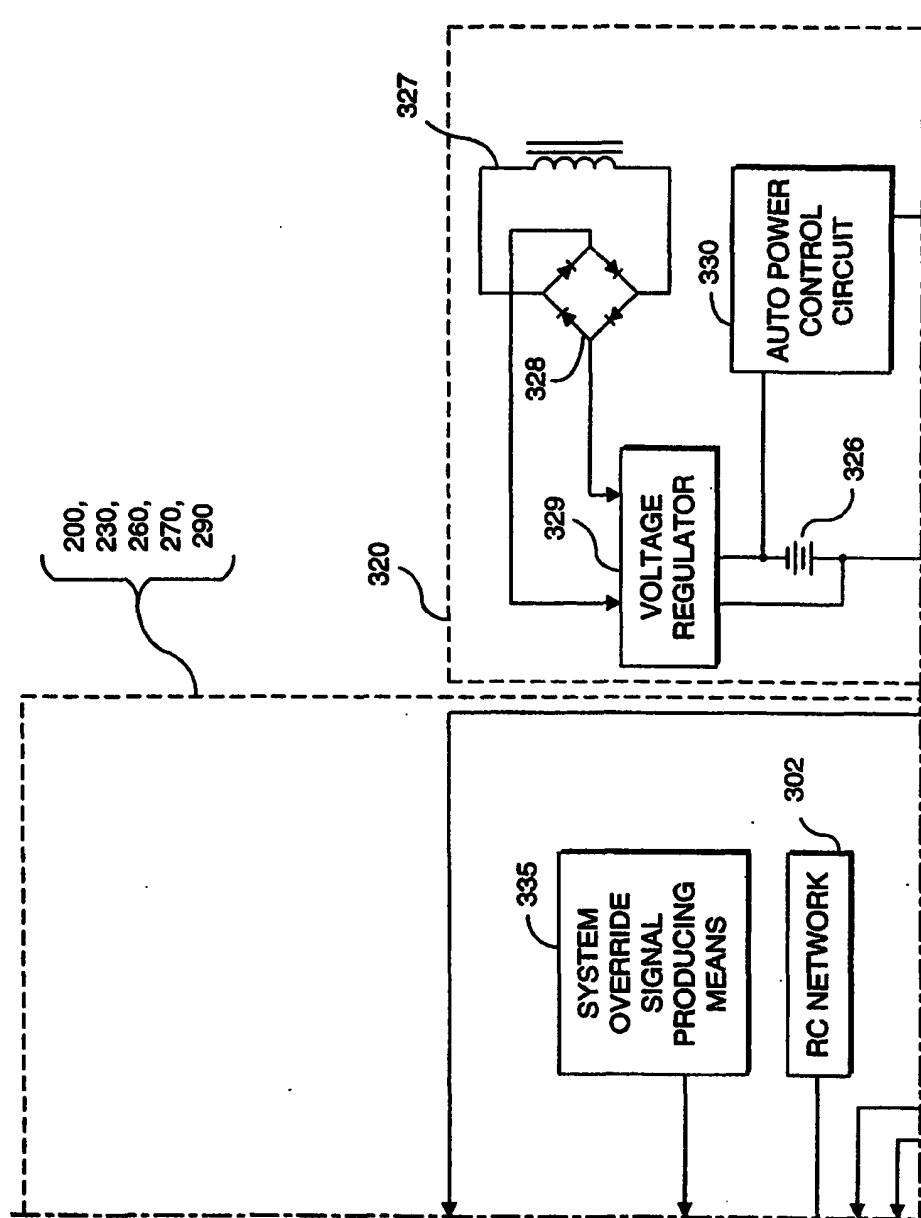


FIG. 29A3

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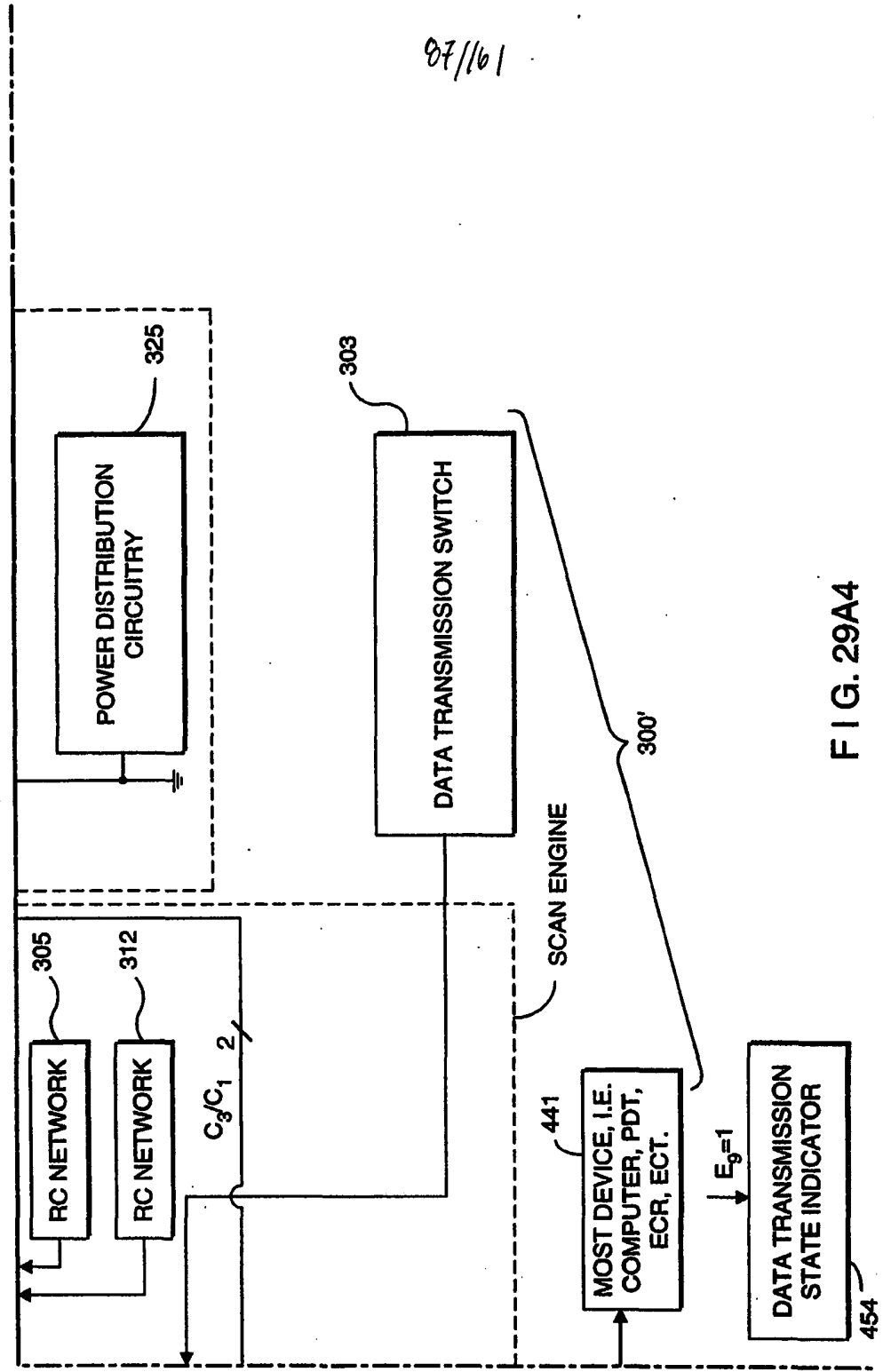


FIG. 29A4

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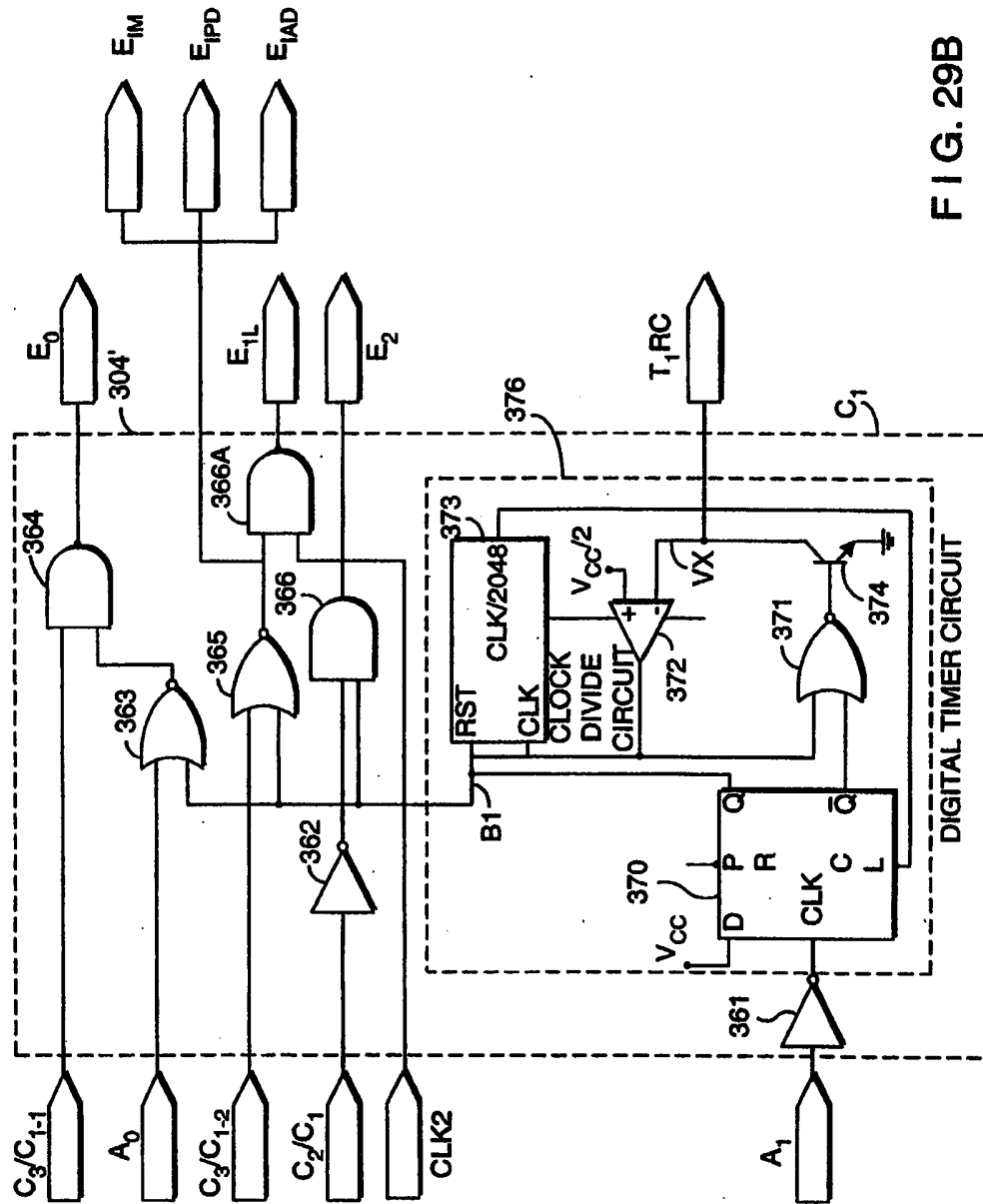


FIG. 29B

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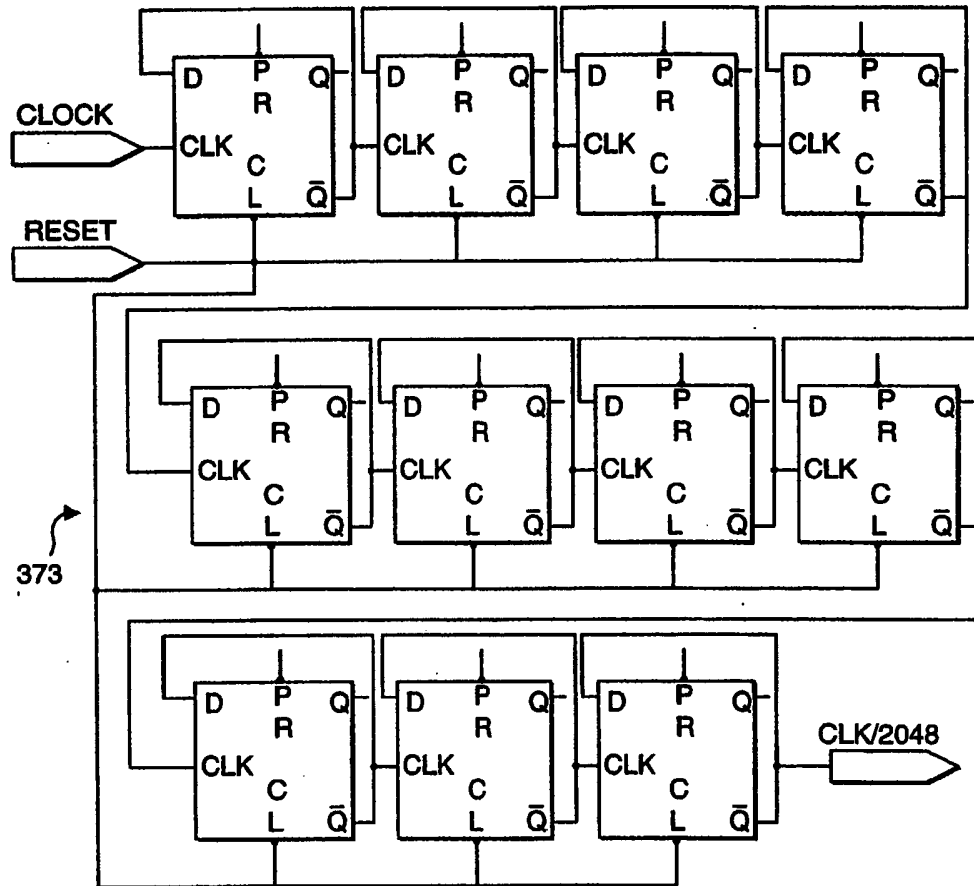


FIG. 29C

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$$\left\{ \begin{array}{l} E_0 = \overline{(B1 + A_0) (C_3 / C_{1-1})} \\ E_{IM} = E_{IPD} = E_{IAD} = \overline{(C_3 / C_{1-2}) + B1} \\ E_L = \overline{[(C_3 / C_{1-1}) + B1] [B2]} \\ E_2 = \overline{(C_2 / C_1) (B1)} \end{array} \right.$$

FIG. 29D

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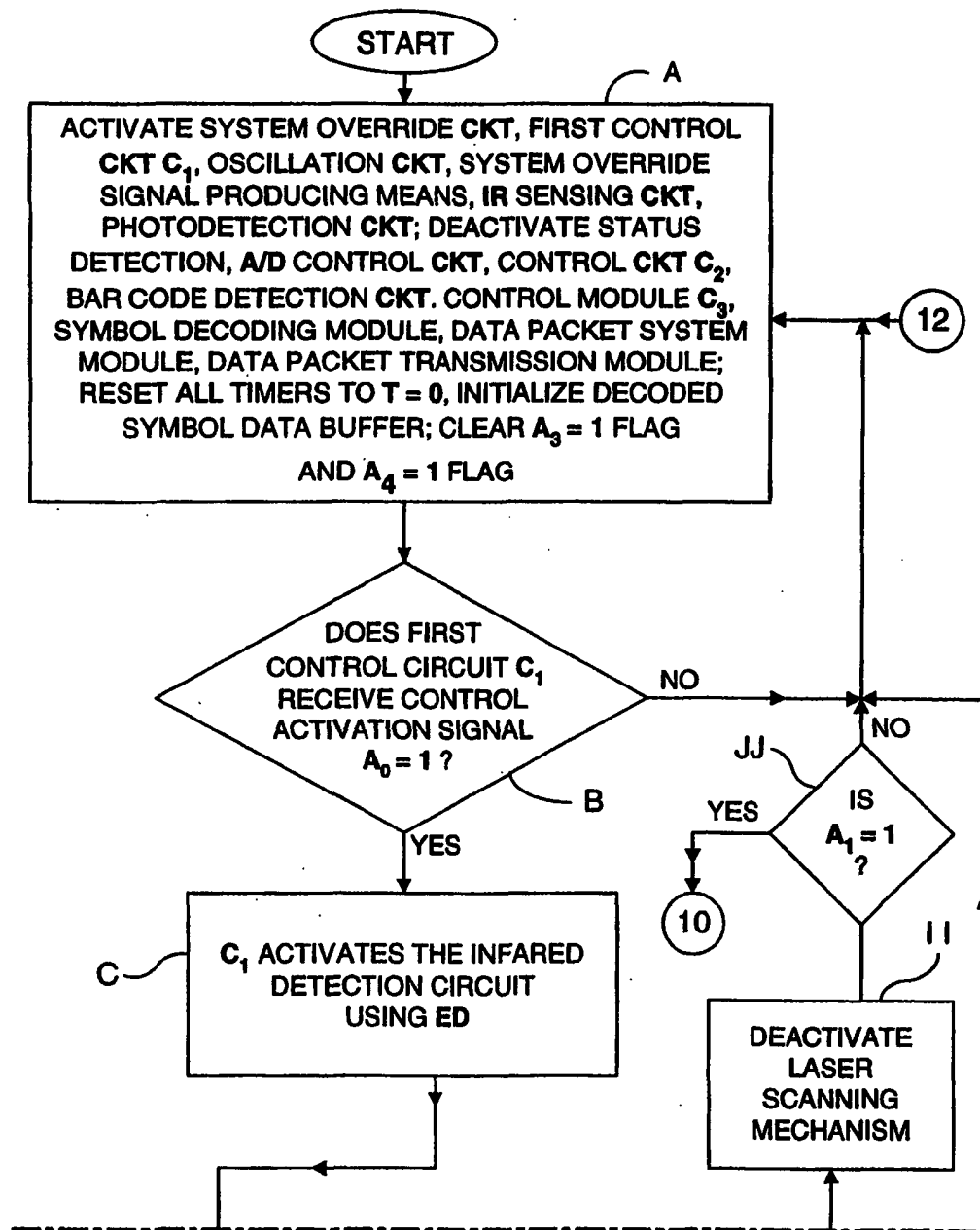
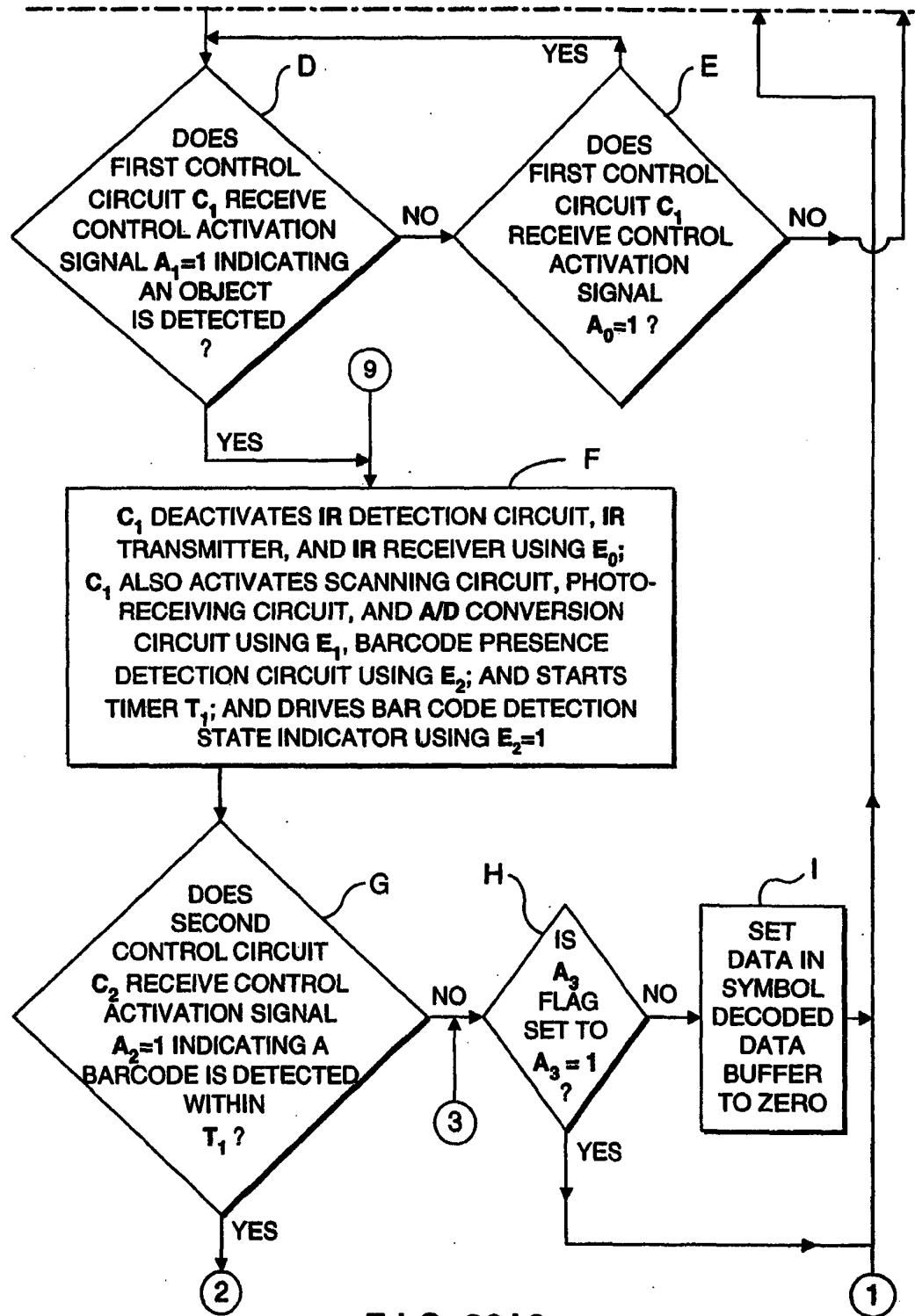


FIG. 30A1



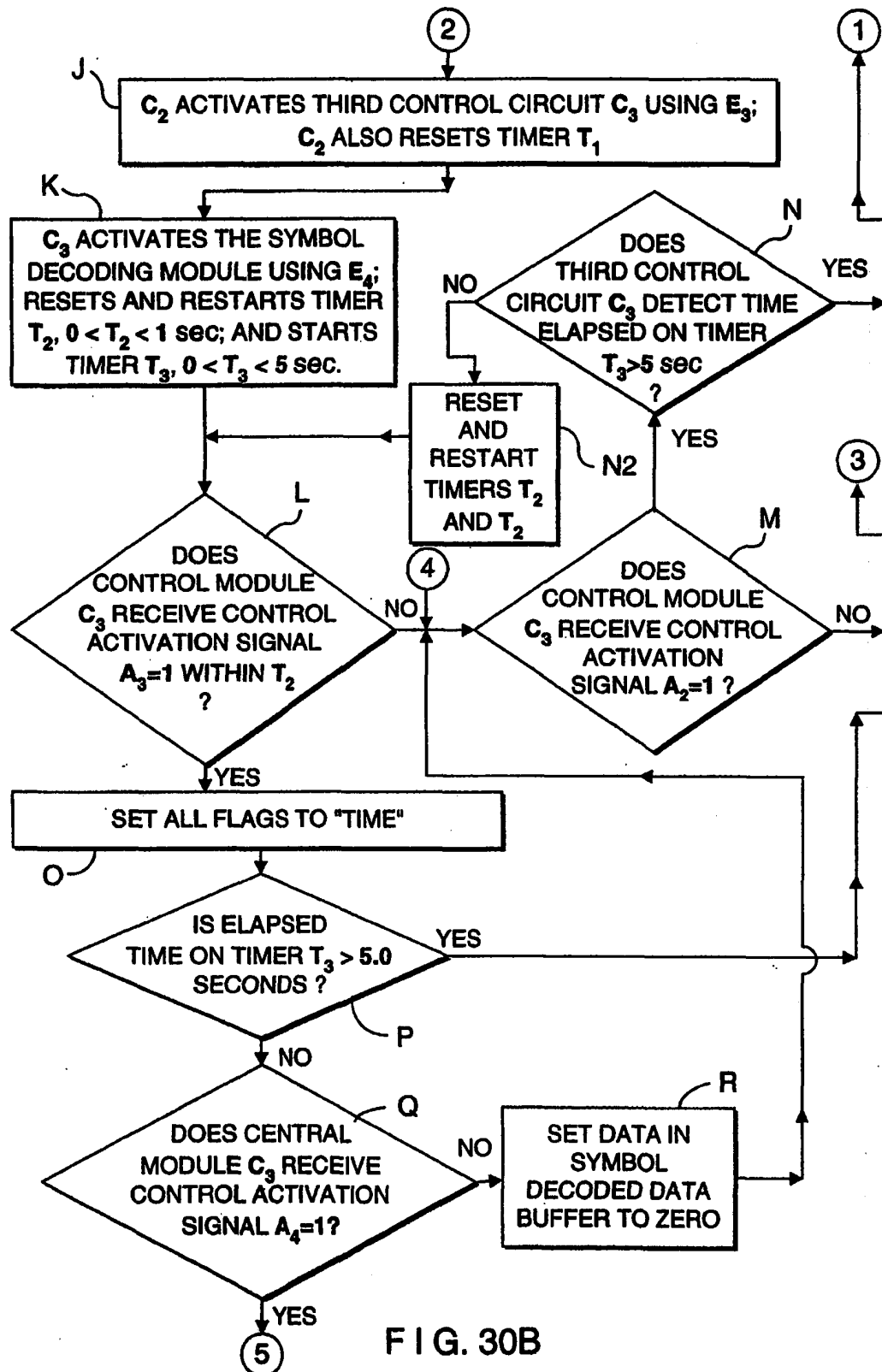


FIG. 30B

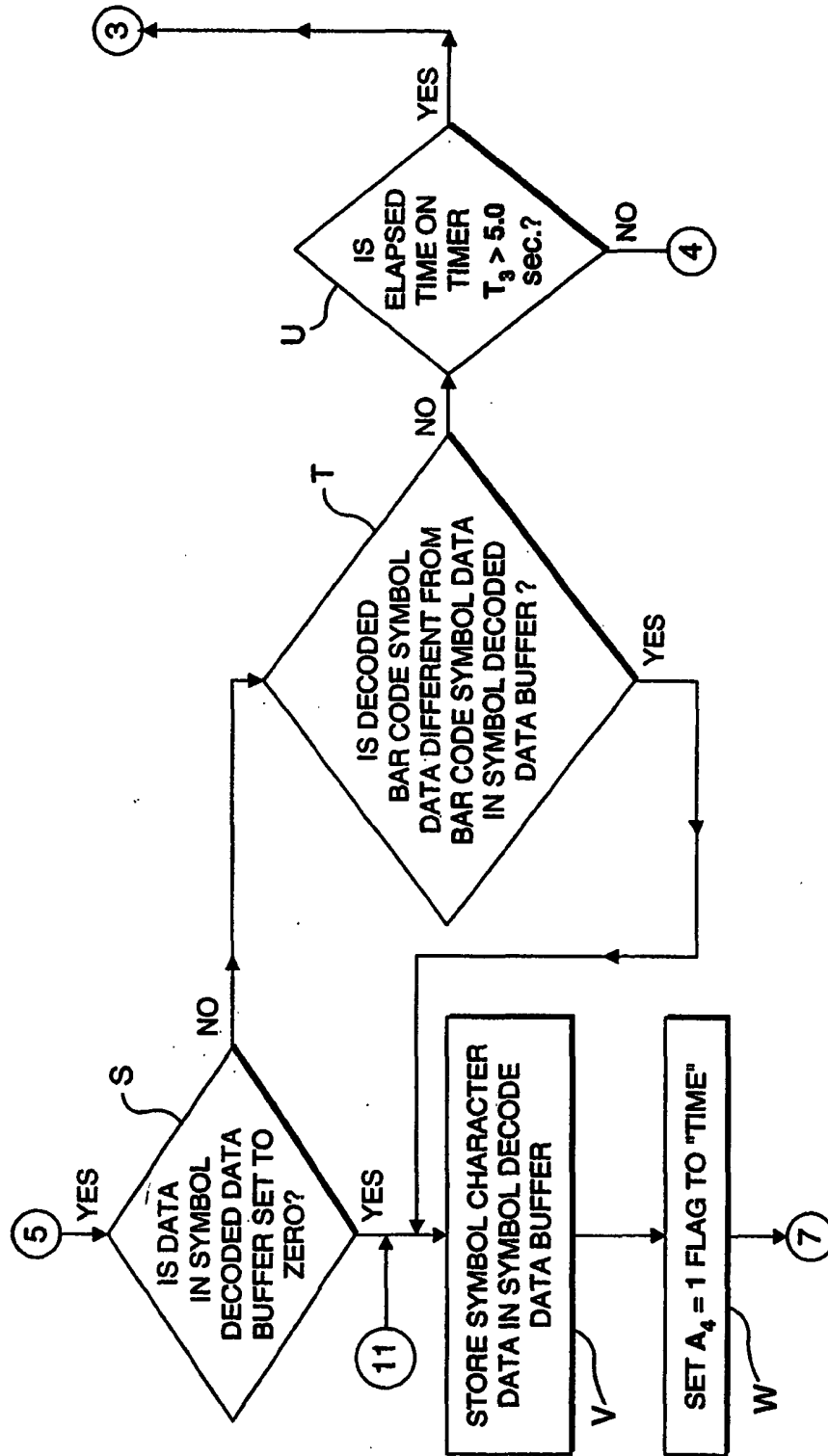


FIG. 30C

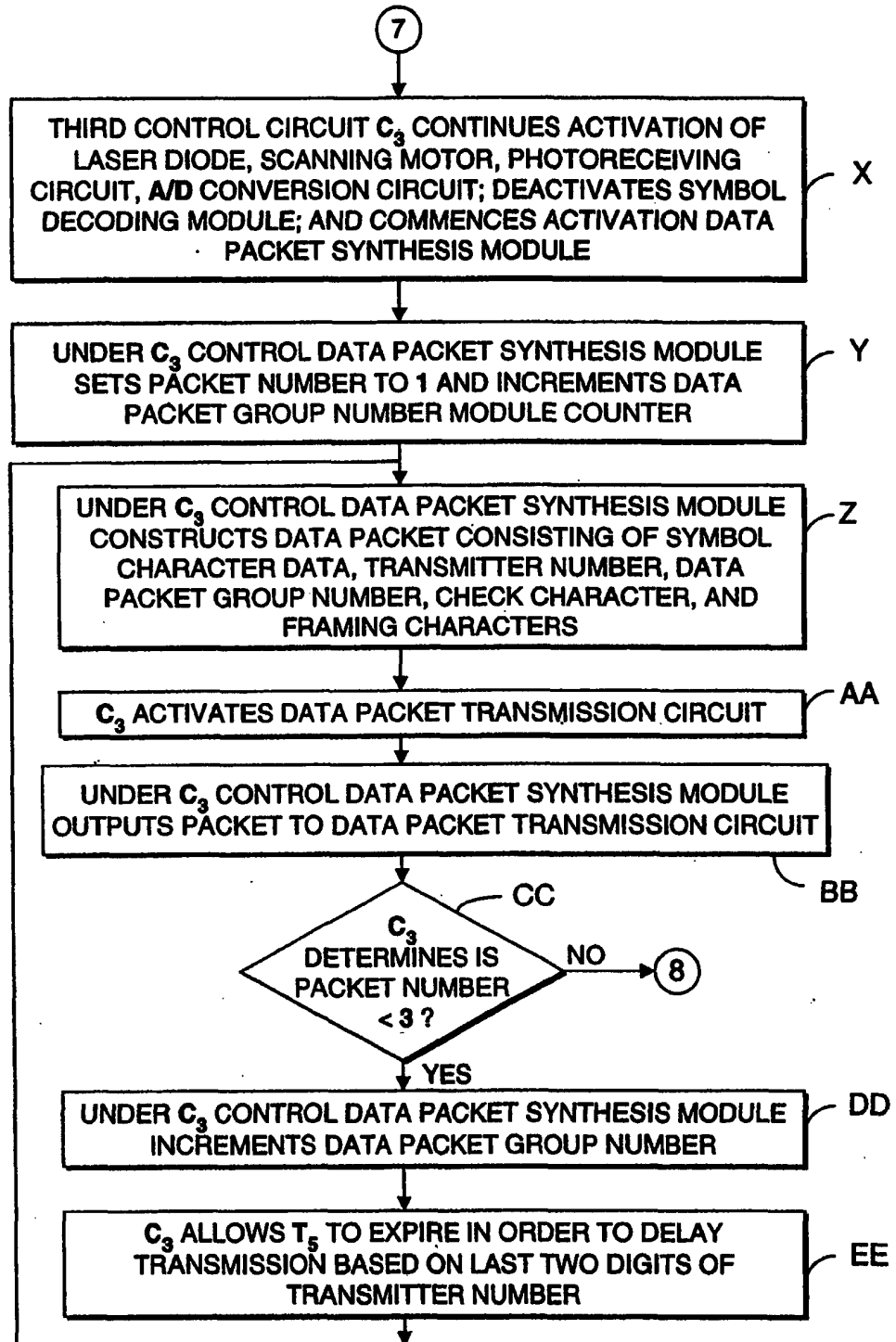


FIG. 30D

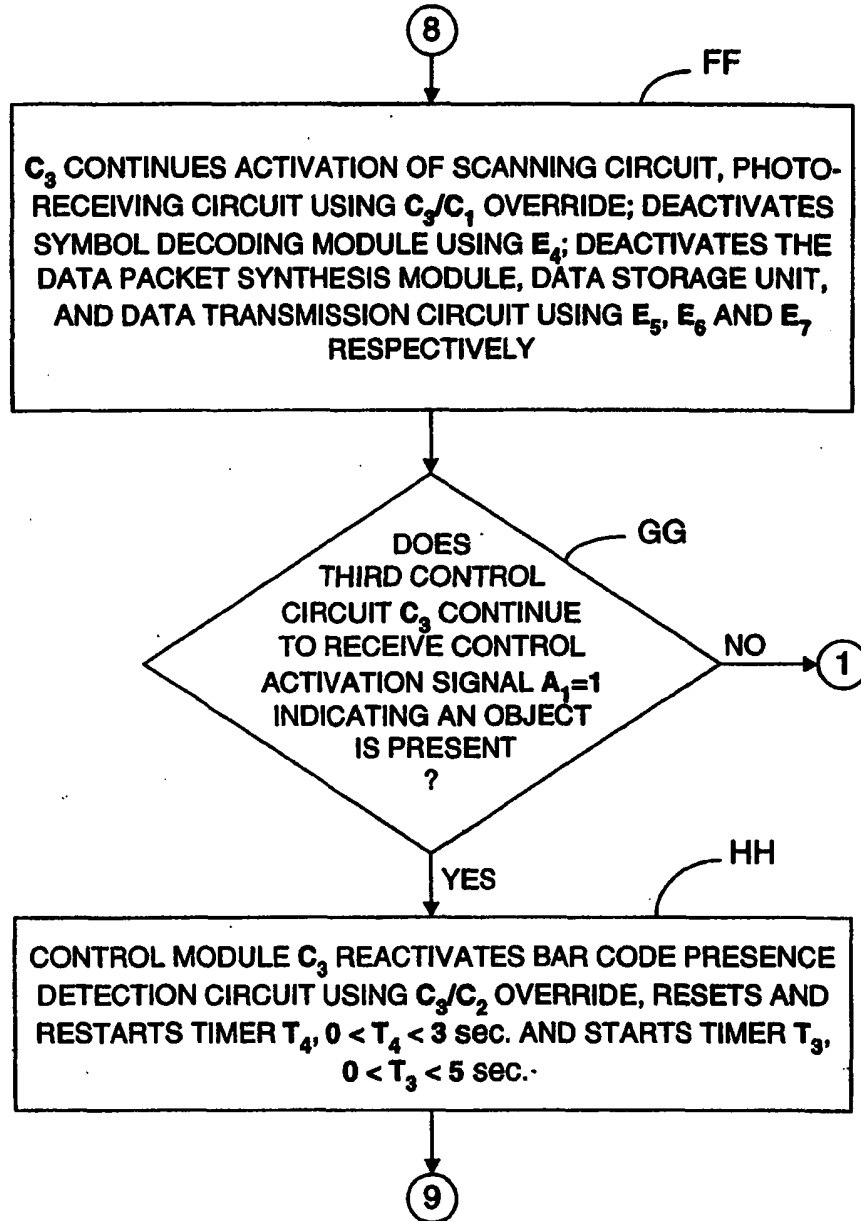


FIG. 30E

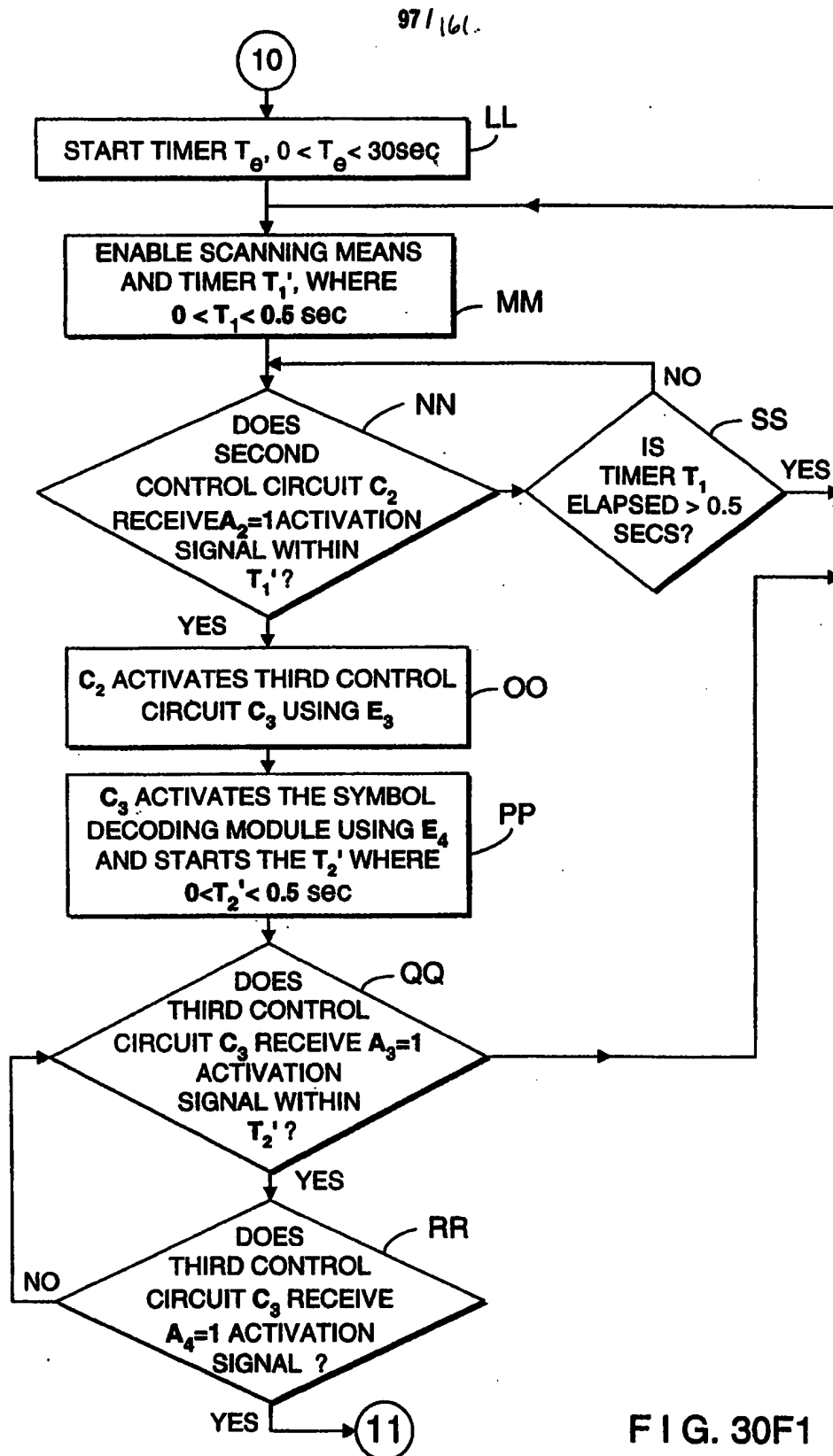
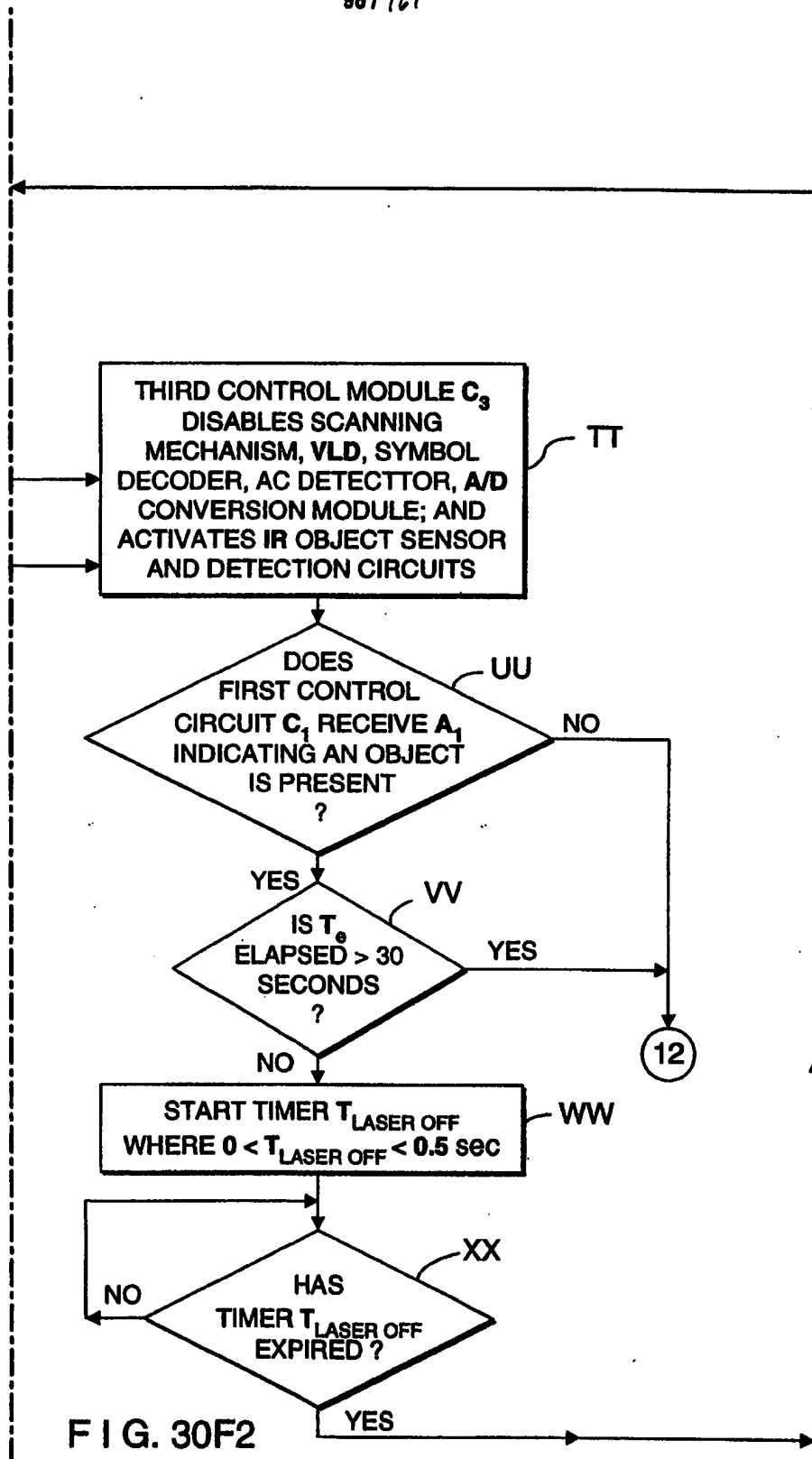


FIG. 30F1



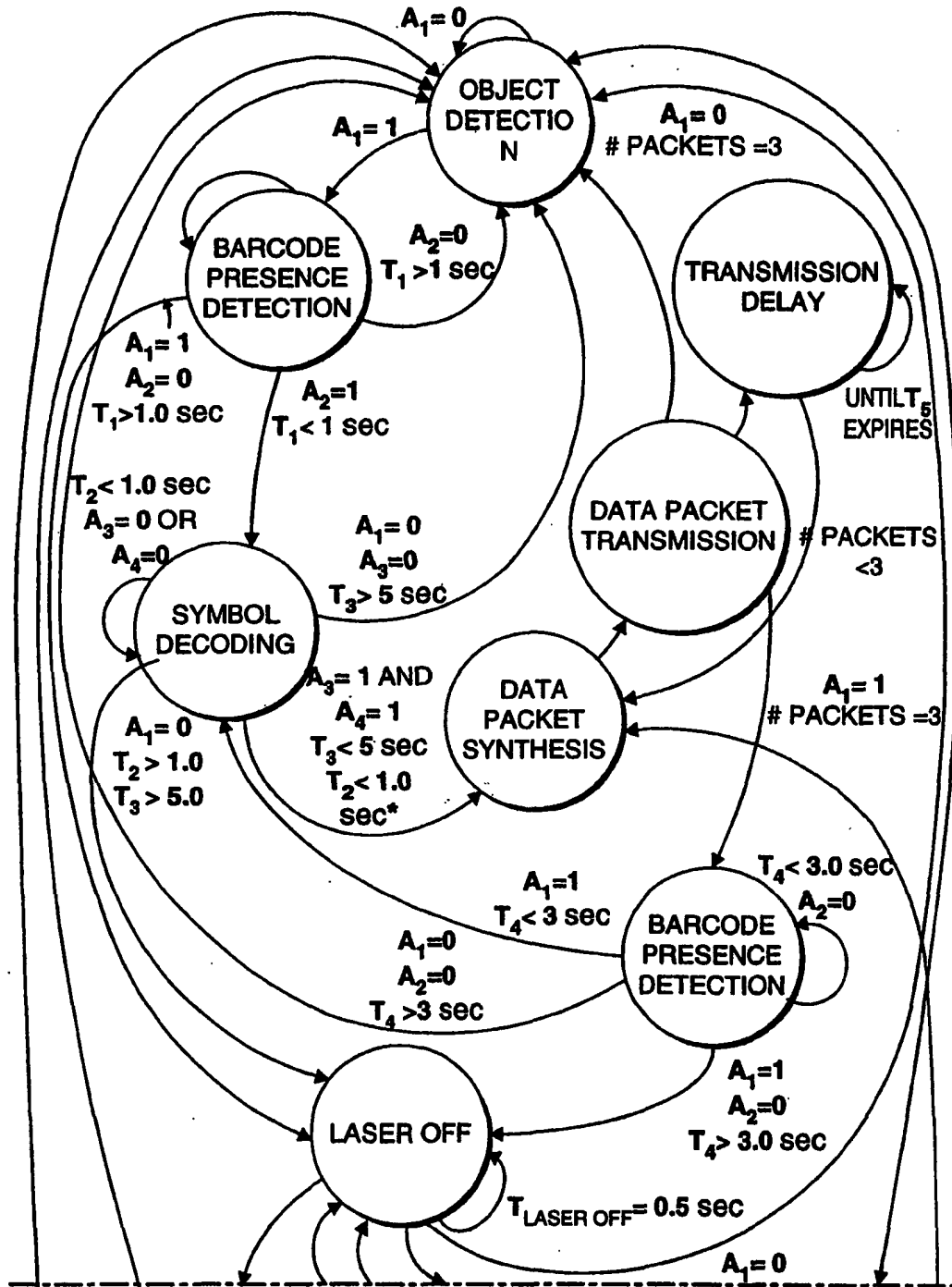
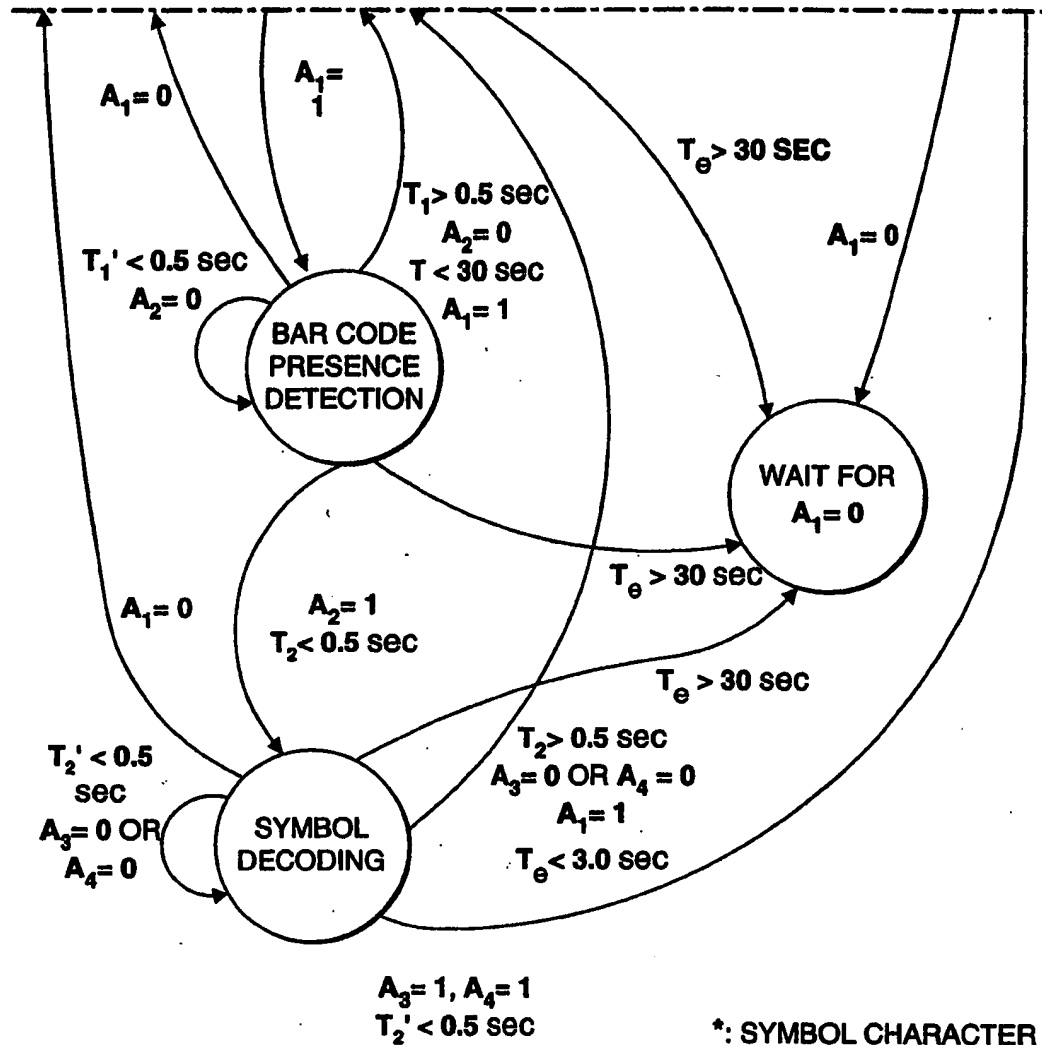


FIG. 31A



*: SYMBOL CHARACTER
DATA IS DIFFERENT
THAN DATA ELEMENT IN
DECODED SYMBOL
DATA BUFFER

FIG. 31B

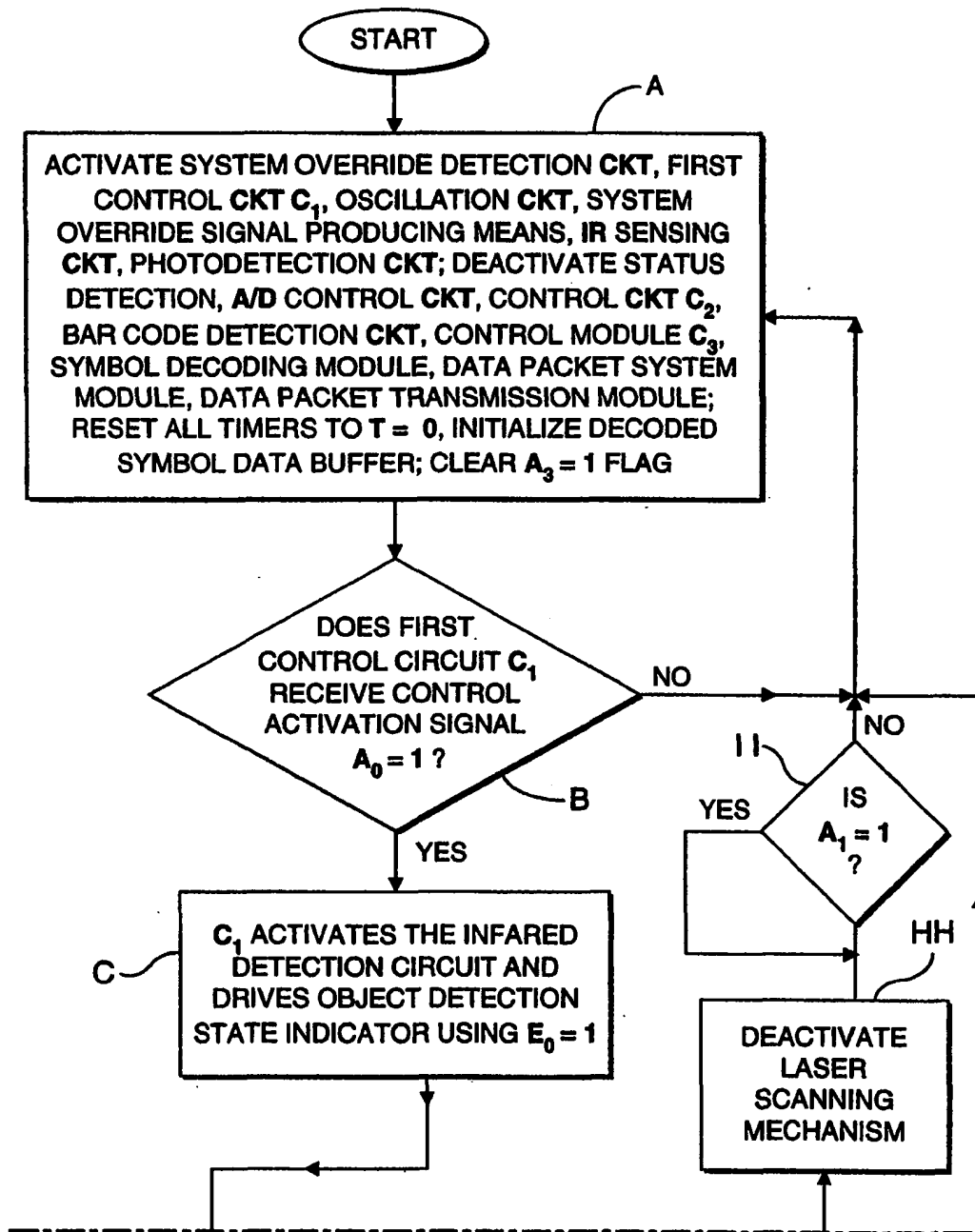


FIG. 32A1

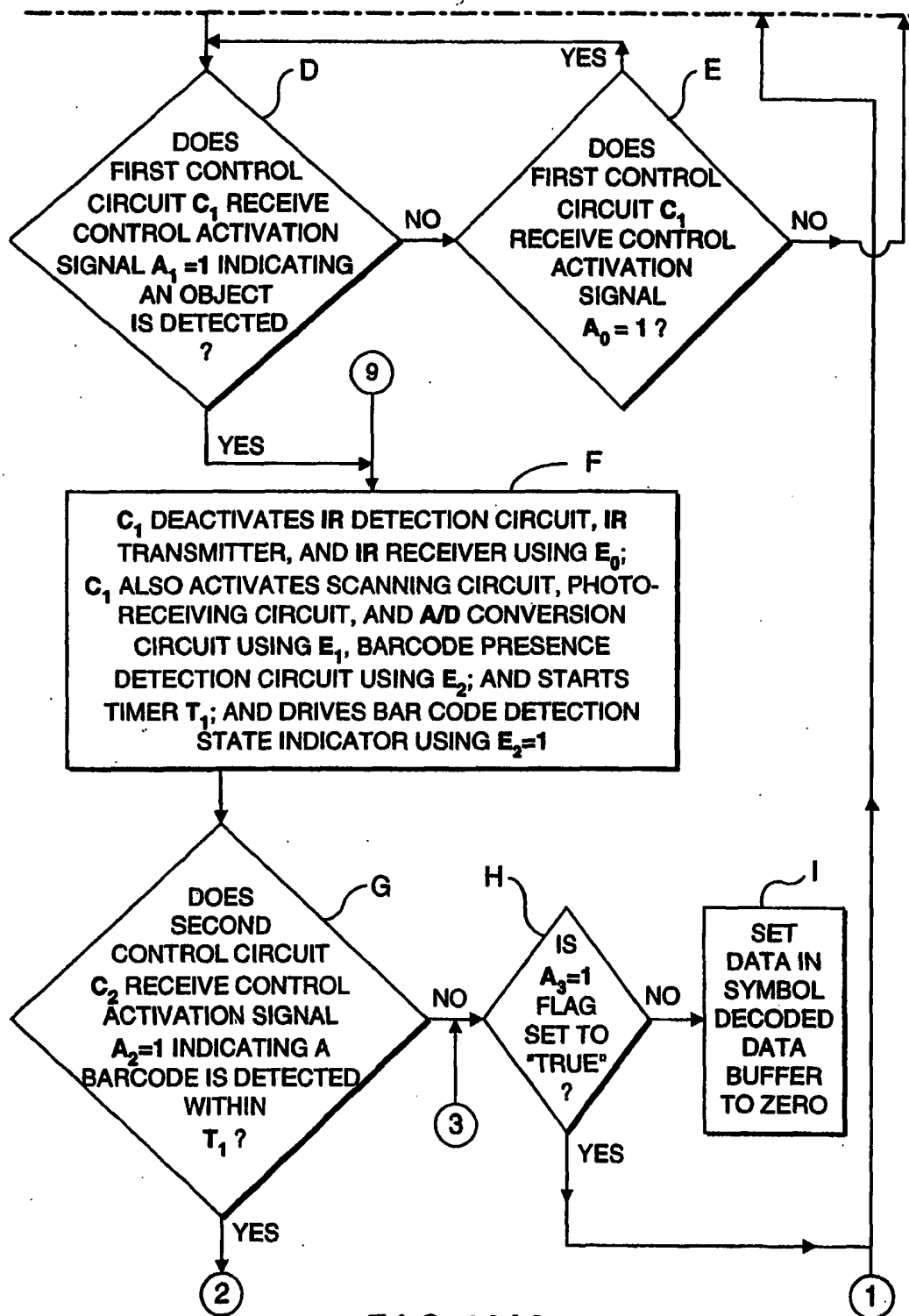
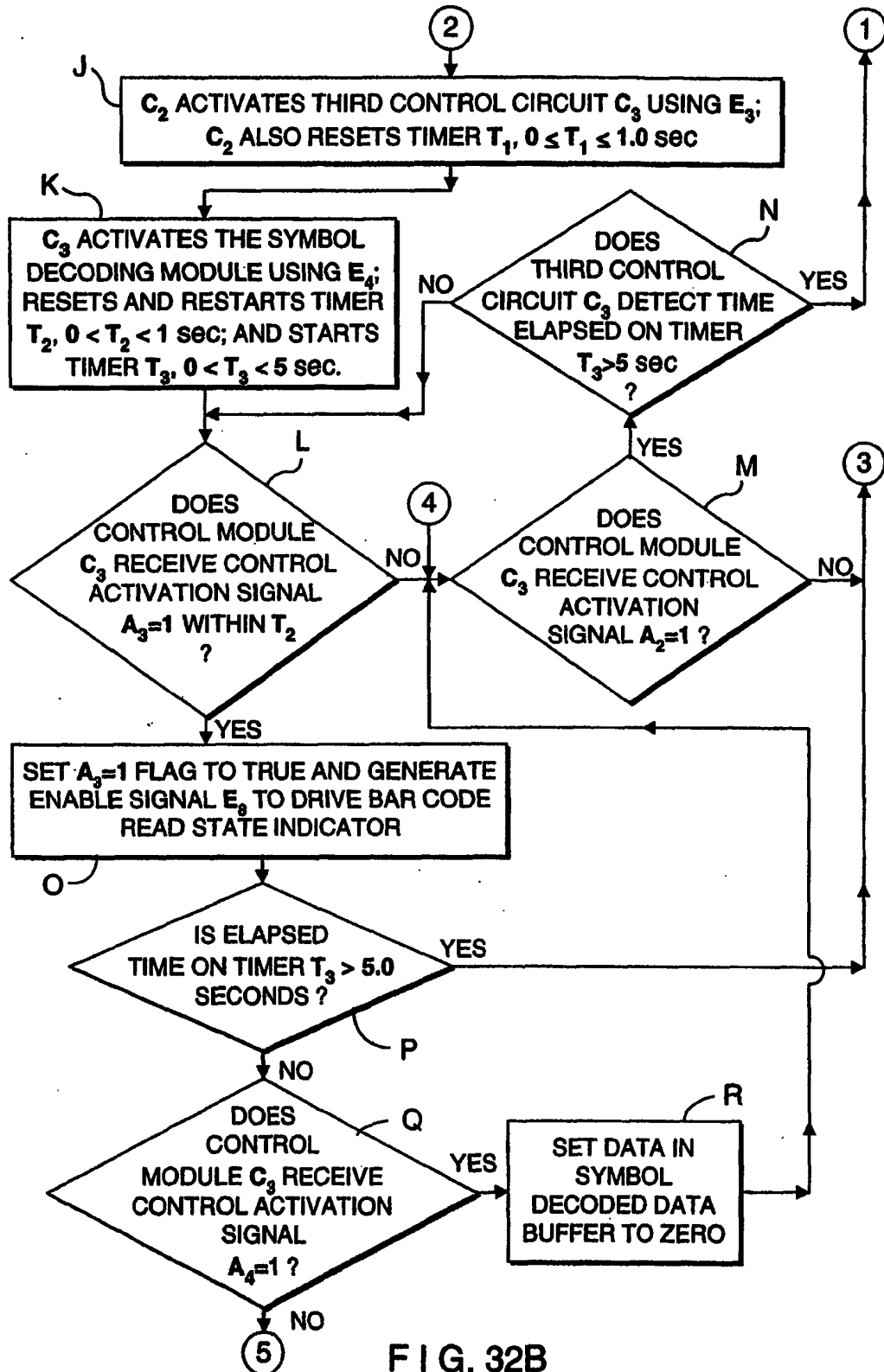


FIG. 32A2



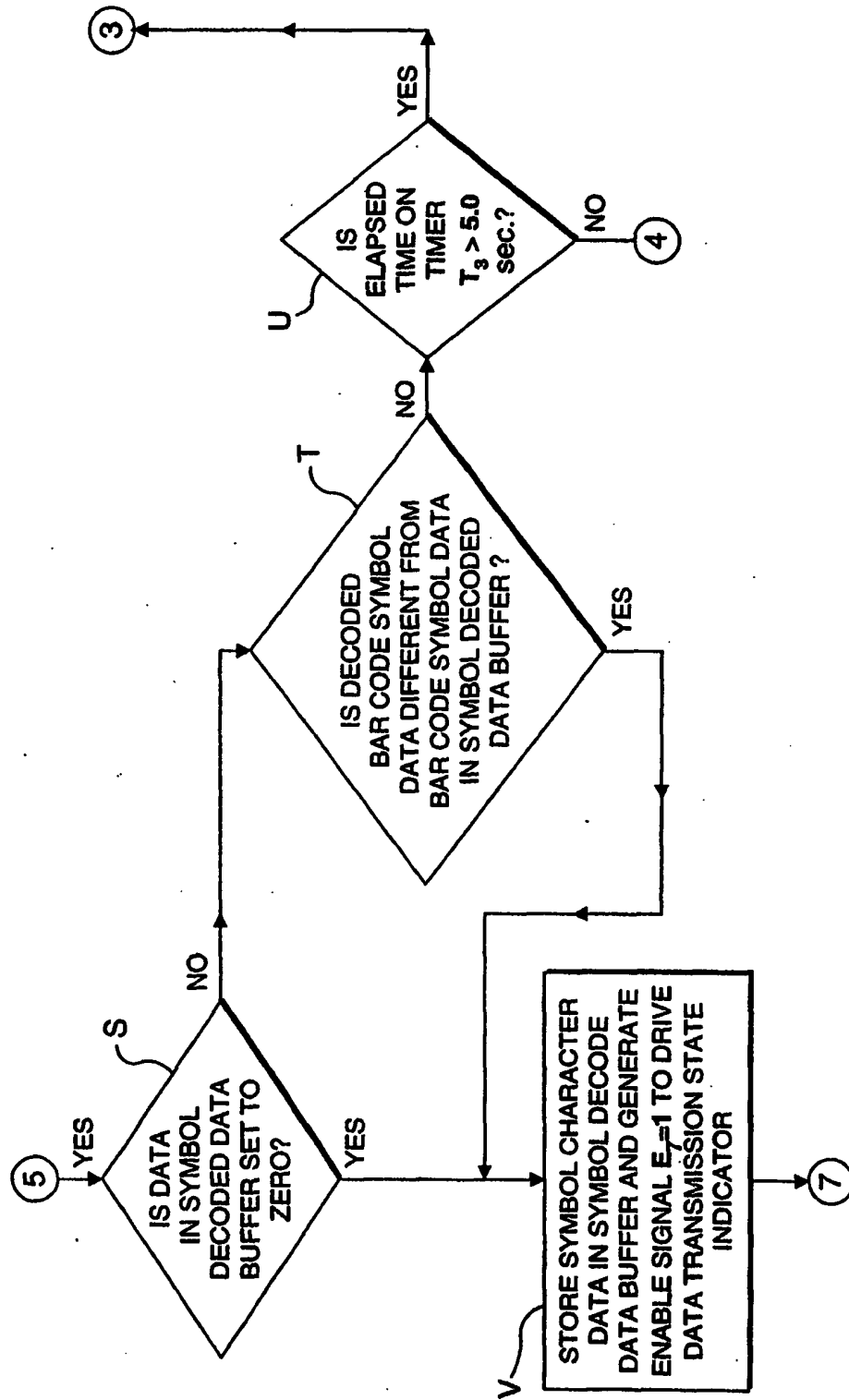


FIG. 32C

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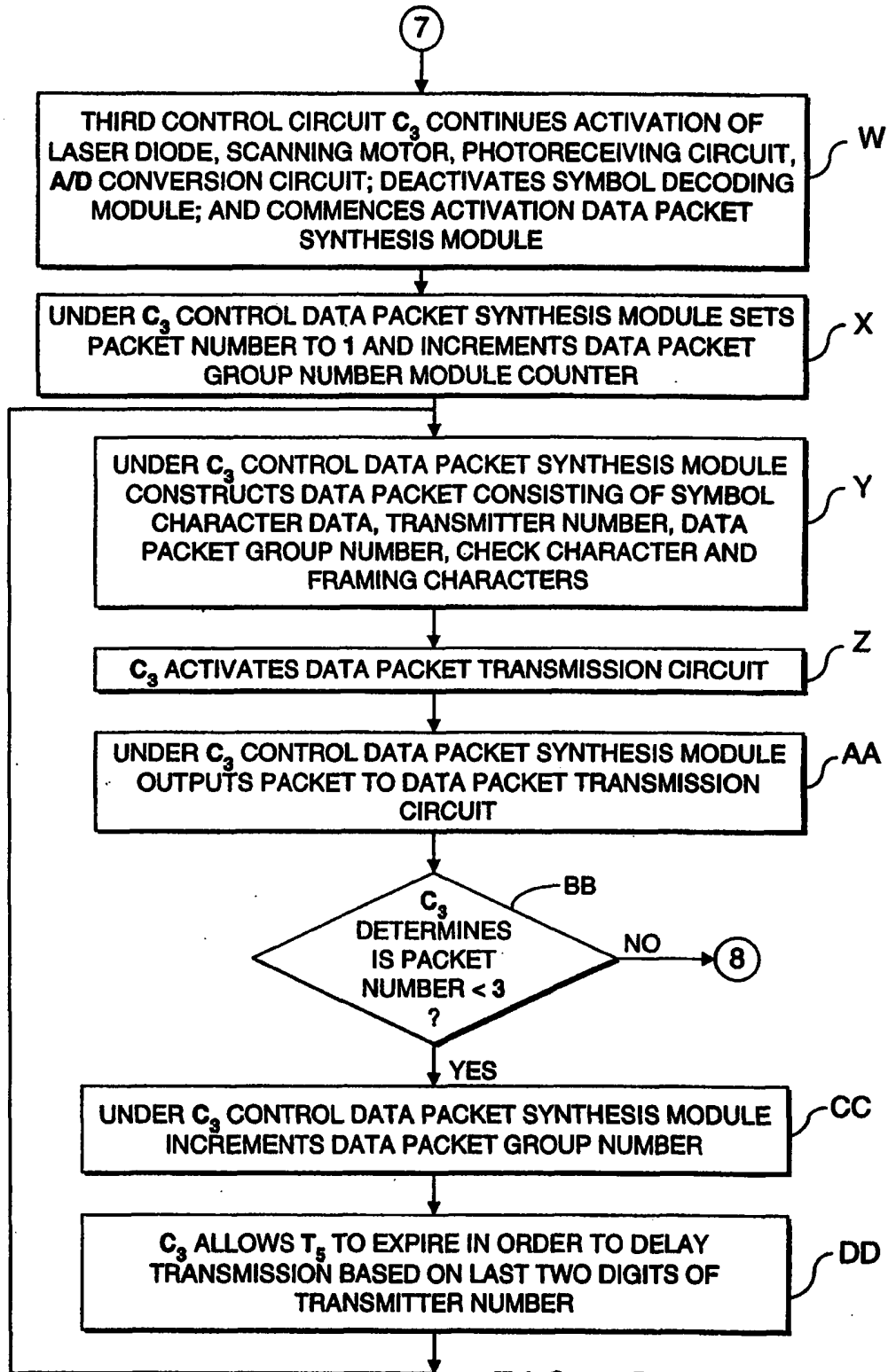


FIG. 32D

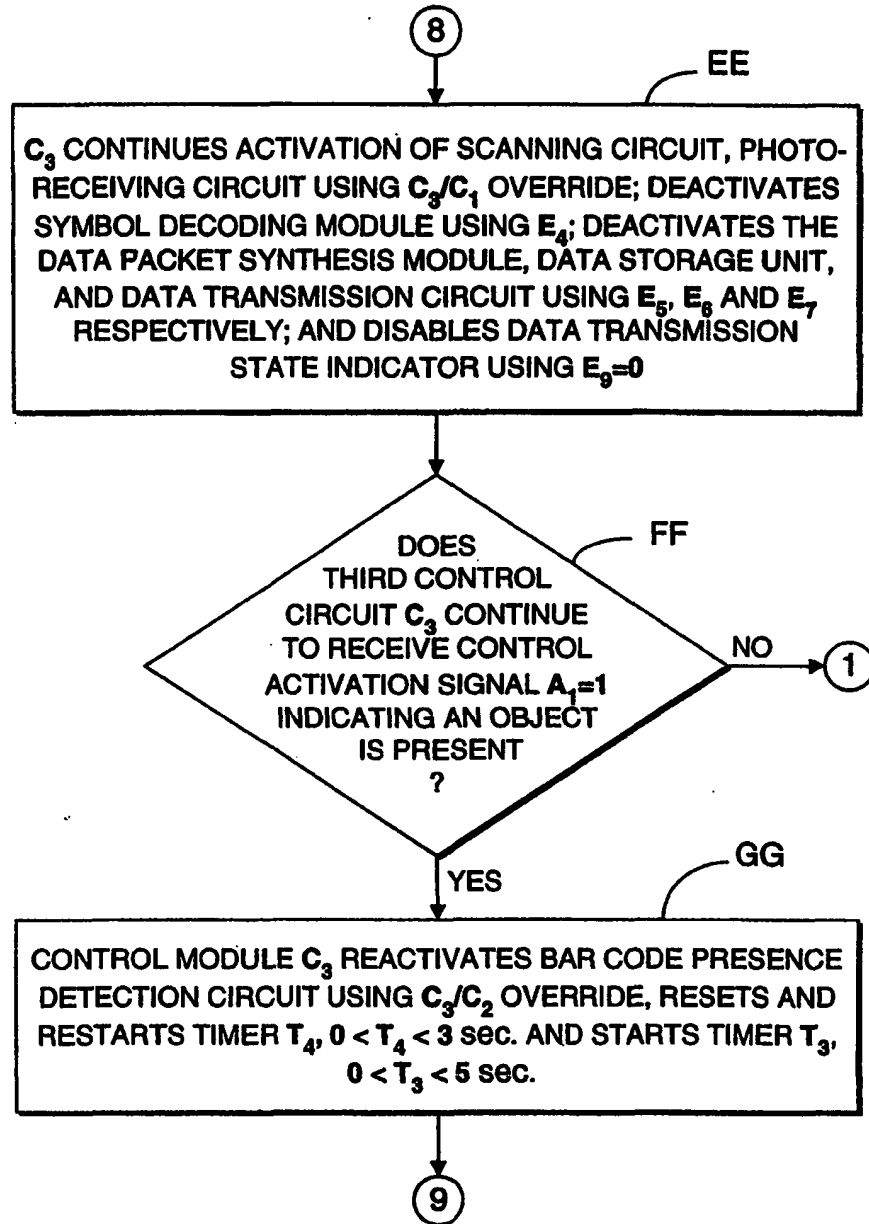


FIG. 32E

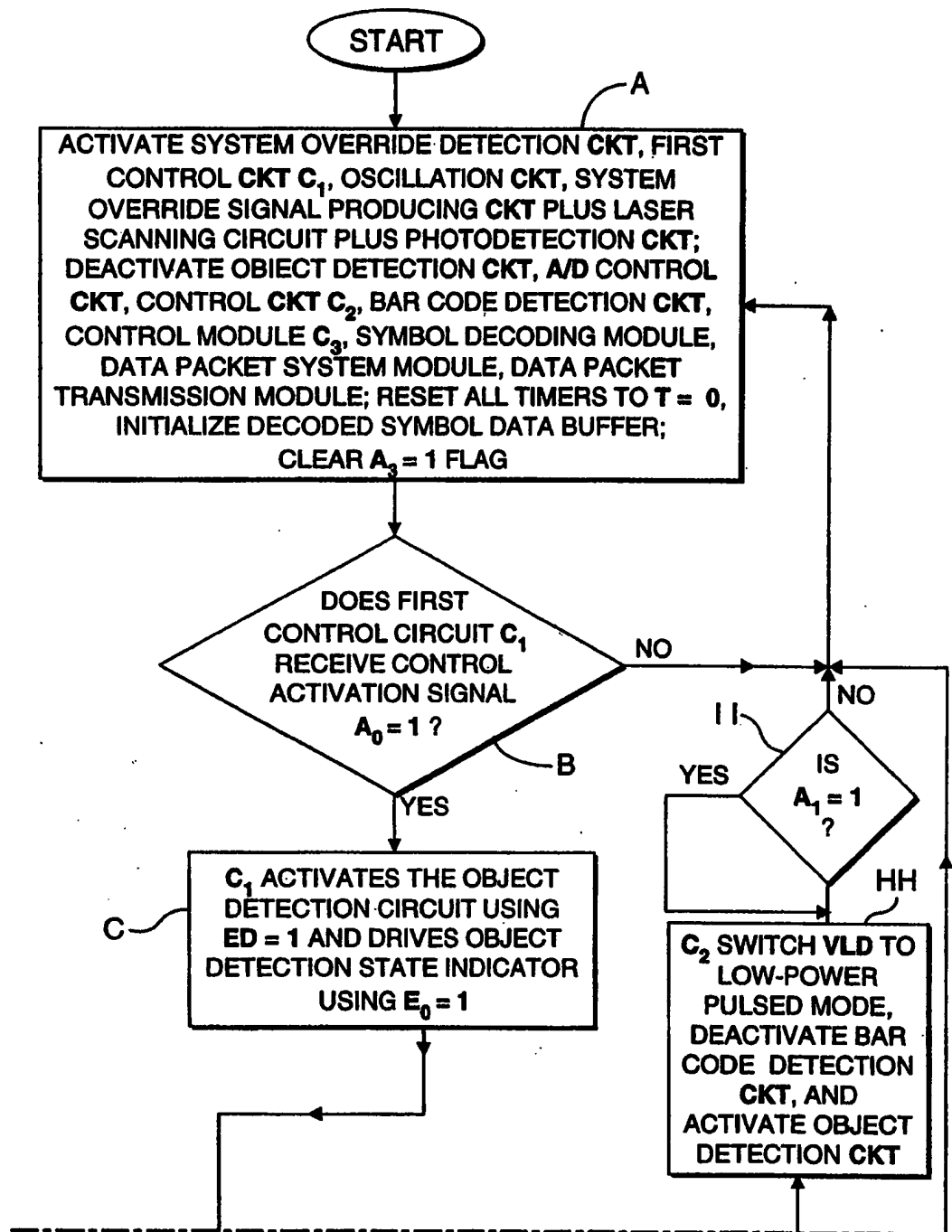
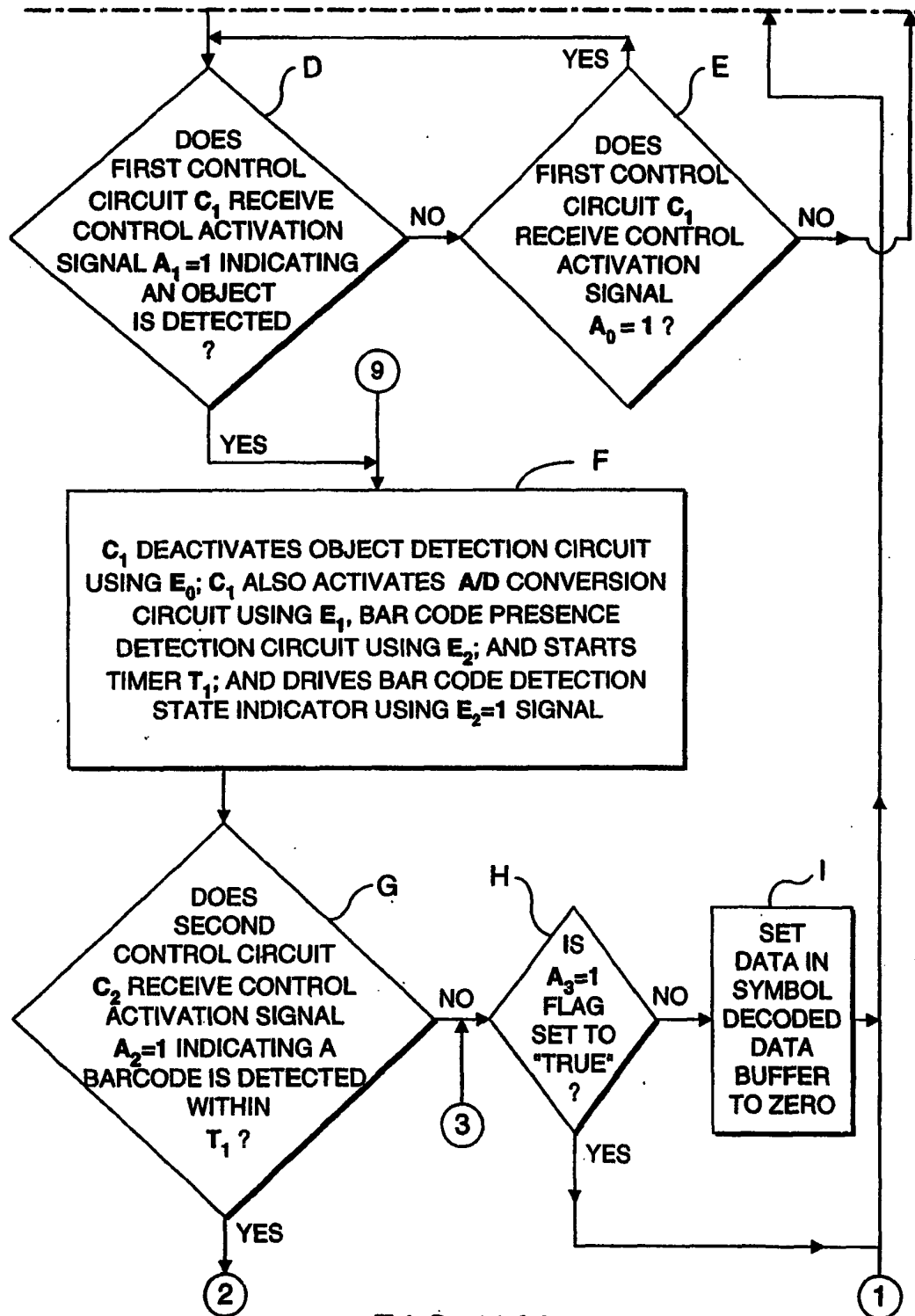
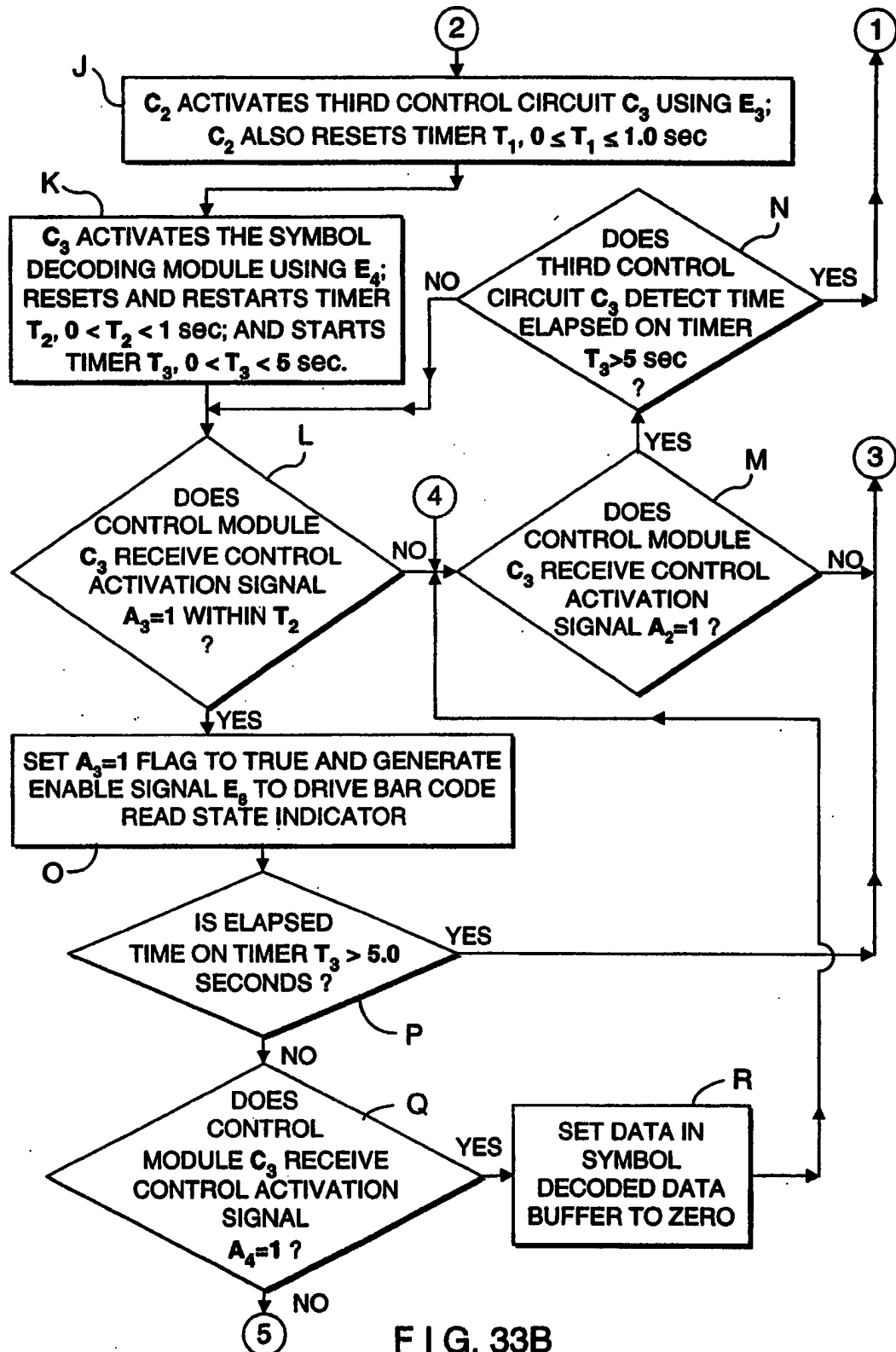


FIG. 33A1





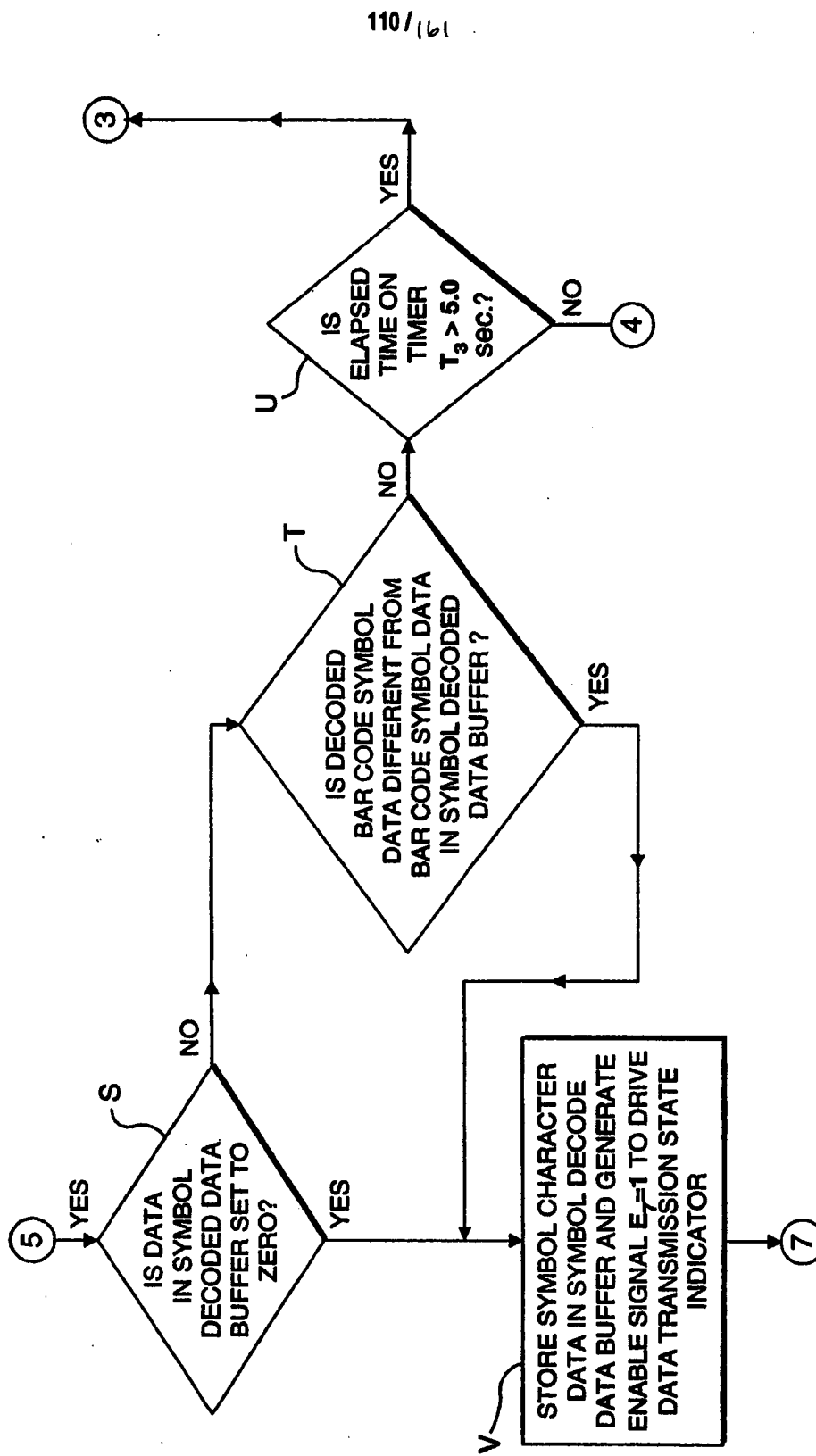


FIG. 33C

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7

THIRD CONTROL CIRCUIT C_3 CONTINUES ACTIVATION OF LASER DIODE, SCANNING MOTOR, PHOTORECEIVING CIRCUIT, A/D CONVERSION CIRCUIT; DEACTIVATES SYMBOL DECODING MODULE; AND COMMENCES ACTIVATION DATA PACKET SYNTHESIS MODULE

W

UNDER C_3 CONTROL DATA PACKET SYNTHESIS MODULE SETS PACKET NUMBER TO 1 AND INCREMENTS DATA PACKET GROUP NUMBER MODULE COUNTER

X

UNDER C_3 CONTROL DATA PACKET SYNTHESIS MODULE CONSTRUCTS DATA PACKET CONSISTING OF SYMBOL CHARACTER DATA, TRANSMITTER NUMBER, DATA PACKET GROUP NUMBER, CHECK CHARACTER AND FRAMING CHARACTERS

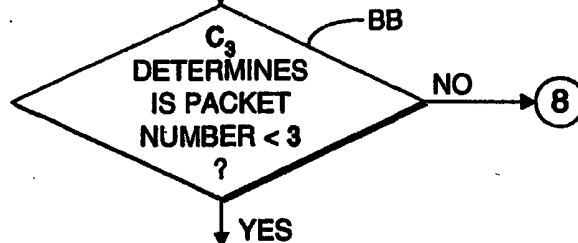
Y

C_3 ACTIVATES DATA PACKET TRANSMISSION CIRCUIT

Z

UNDER C_3 CONTROL DATA PACKET SYNTHESIS MODULE OUTPUTS PACKET TO DATA PACKET TRANSMISSION CIRCUIT

AA



8

UNDER C_3 CONTROL DATA PACKET SYNTHESIS MODULE INCREMENTS DATA PACKET GROUP NUMBER

CC

C_3 ALLOWS T_5 TO EXPIRE IN ORDER TO DELAY TRANSMISSION BASED ON LAST TWO DIGITS OF TRANSMITTER NUMBER

DD

FIG. 33D

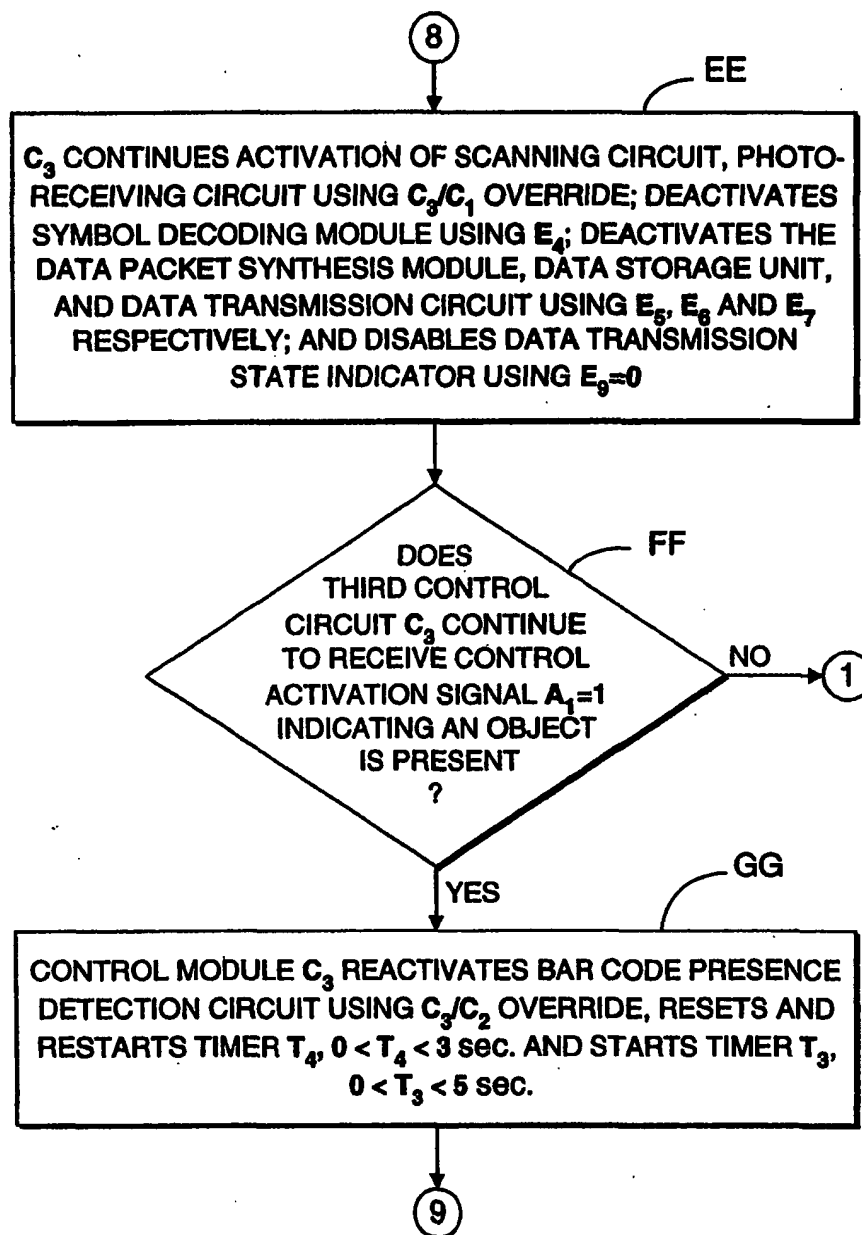
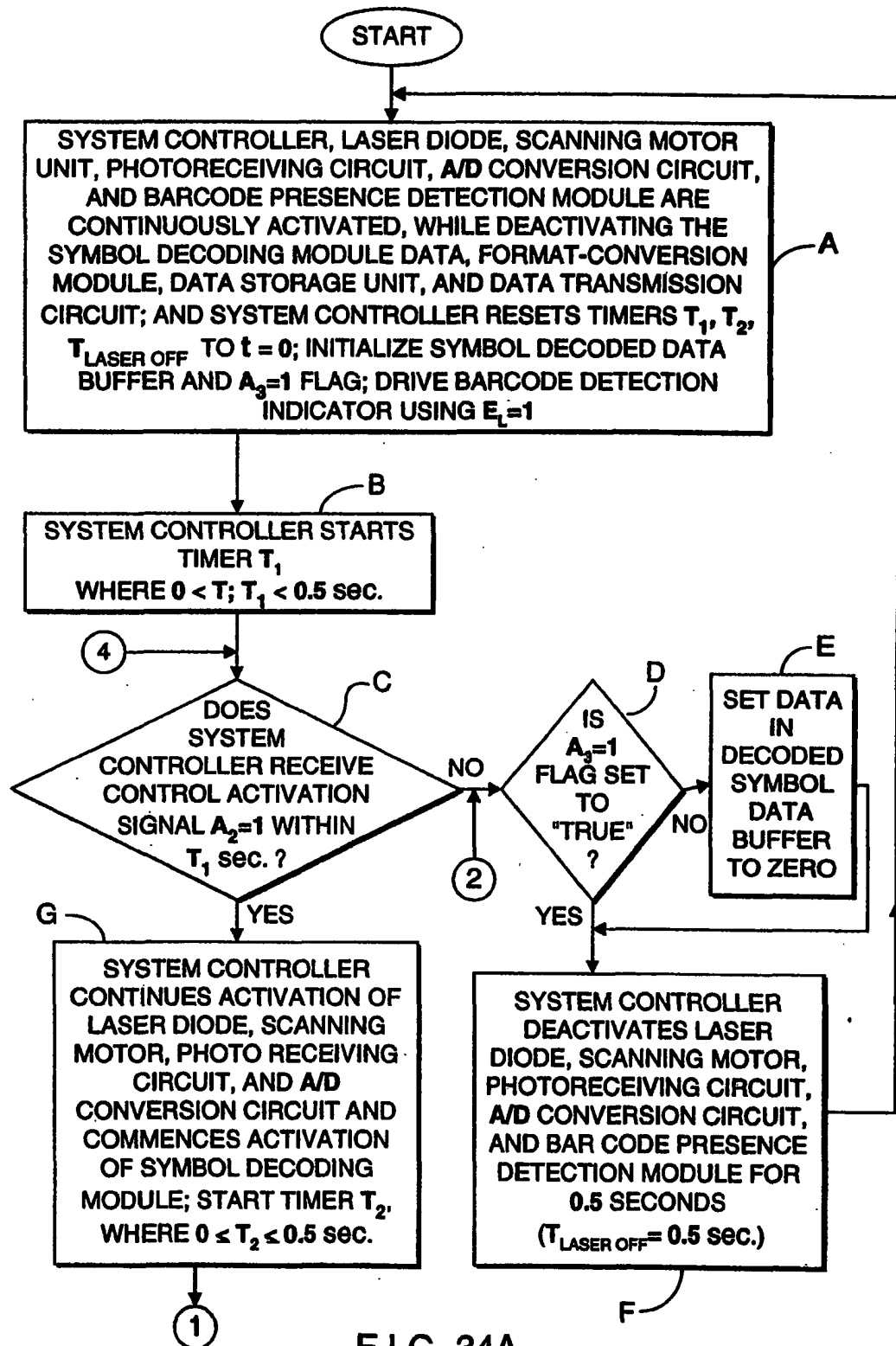


FIG. 33E



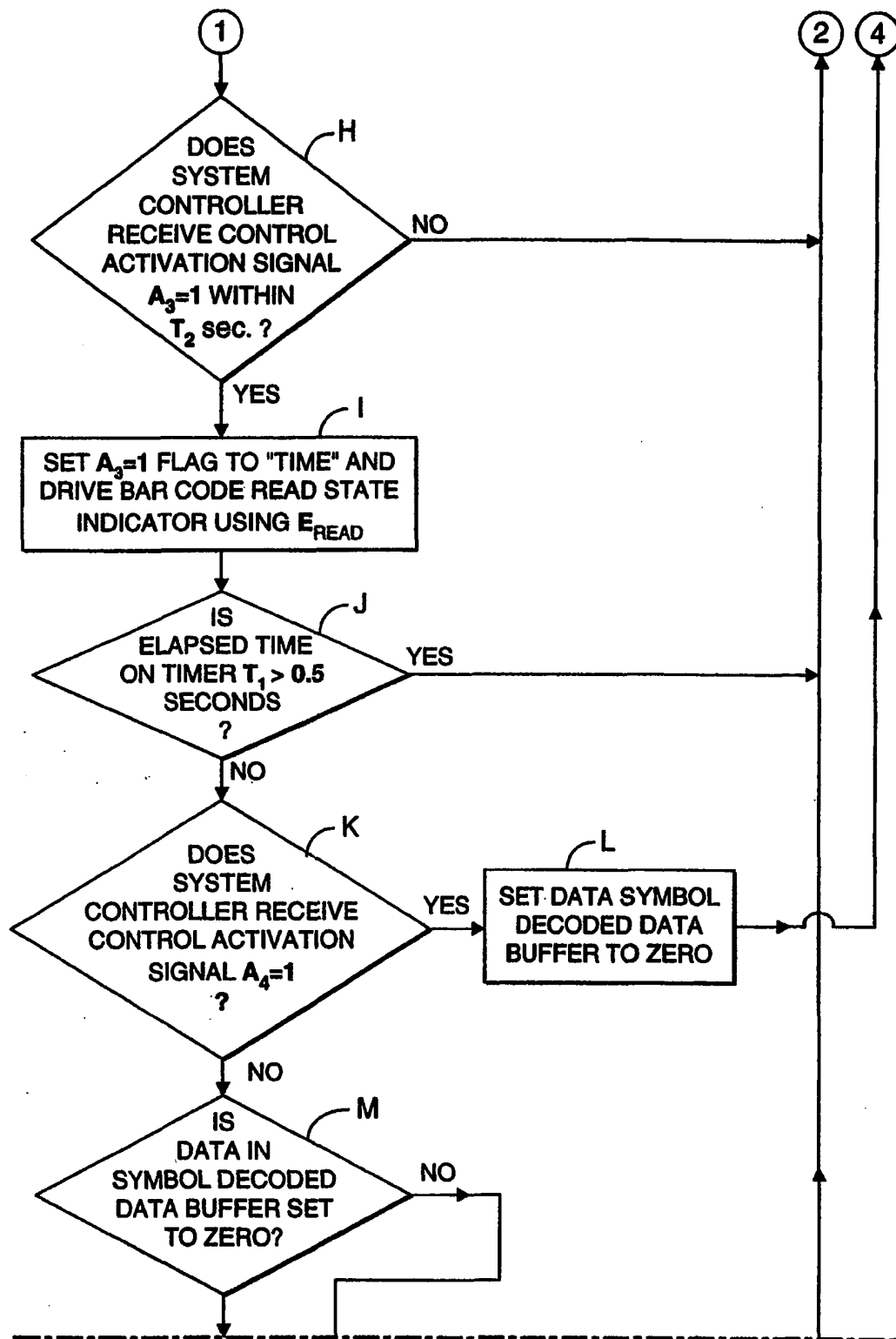


FIG. 34B1

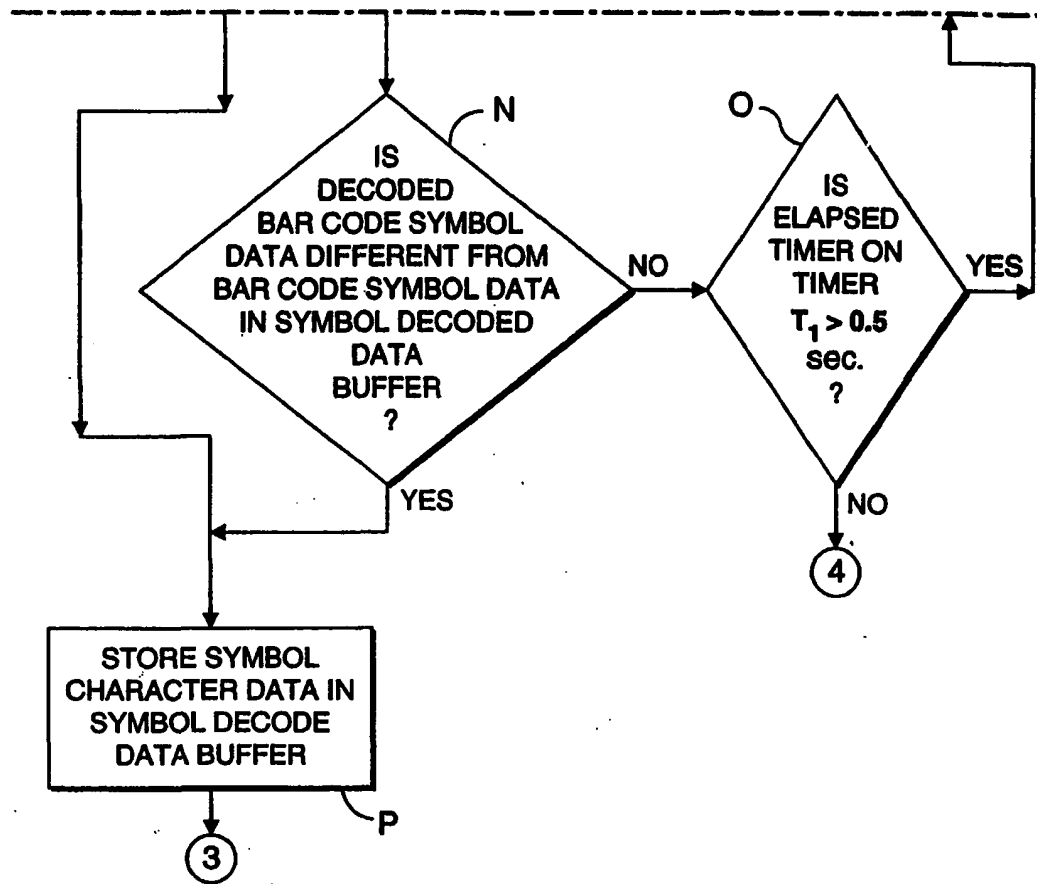


FIG. 34B2

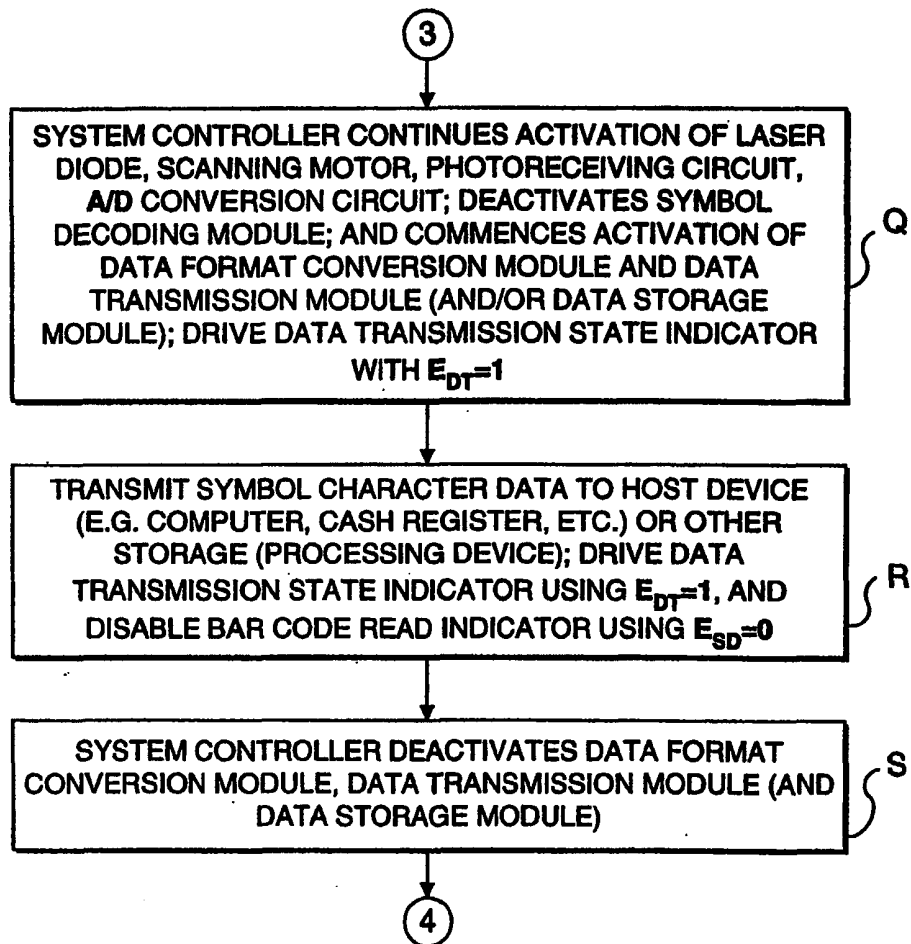


FIG. 34C

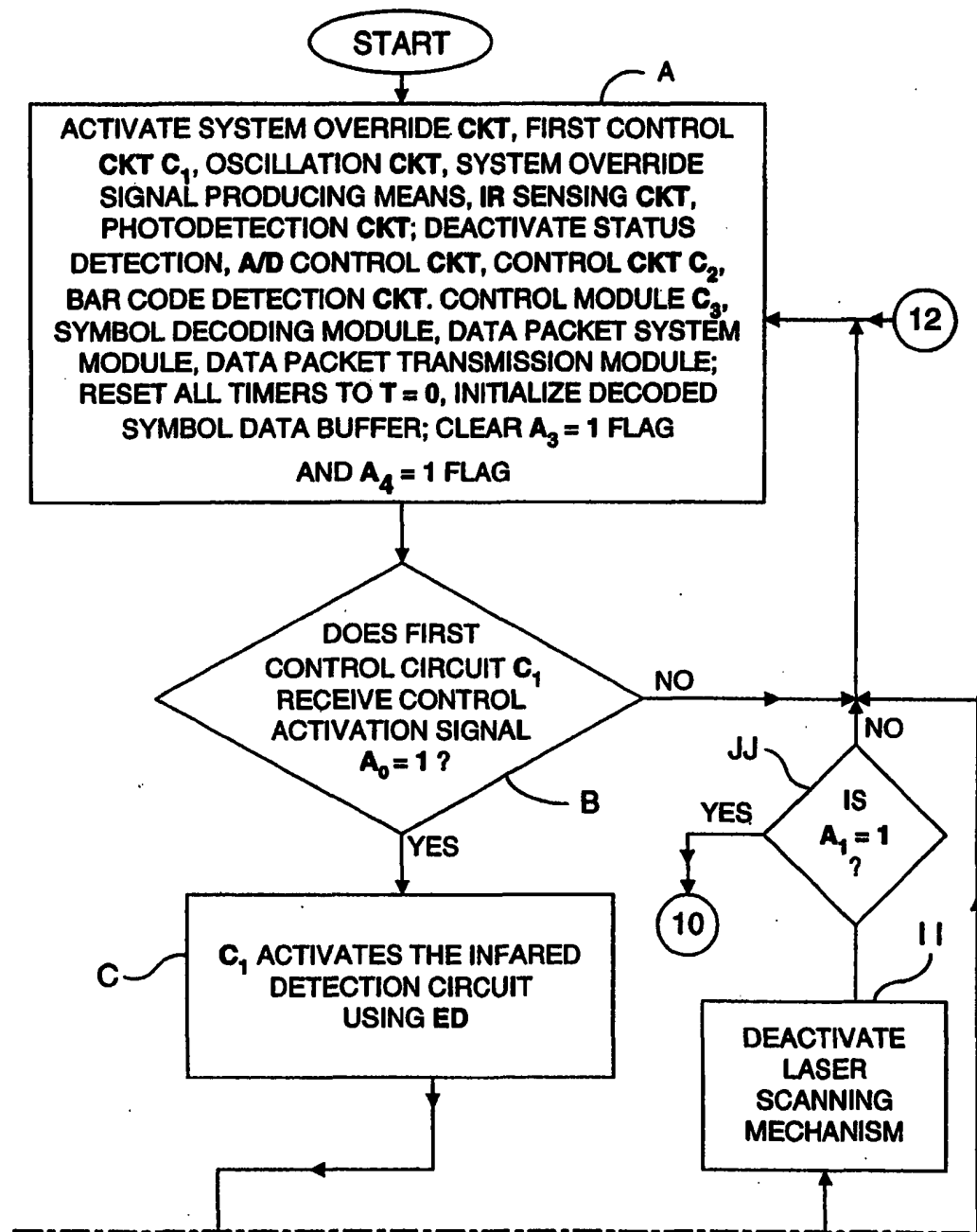
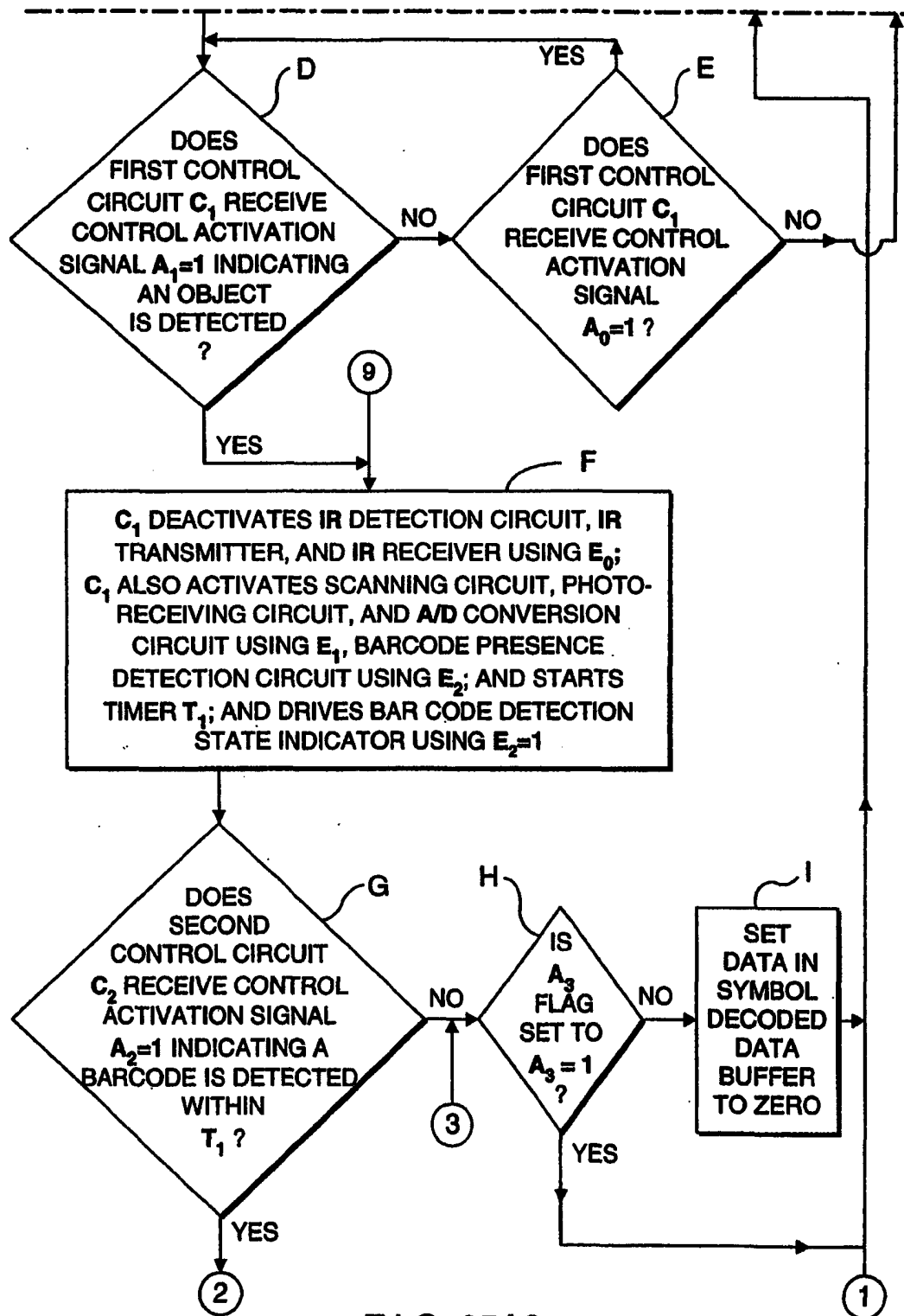
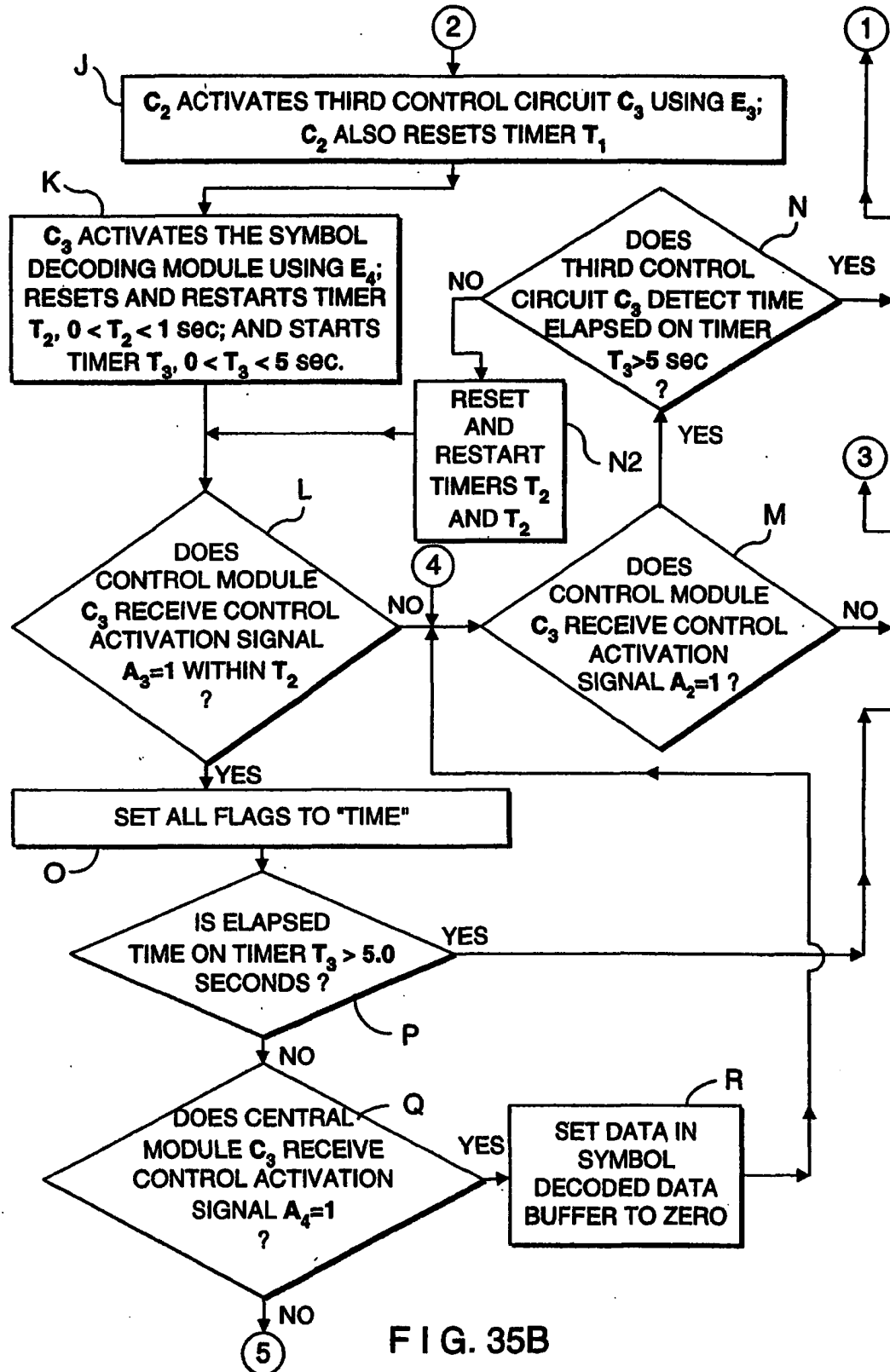


FIG. 35A1





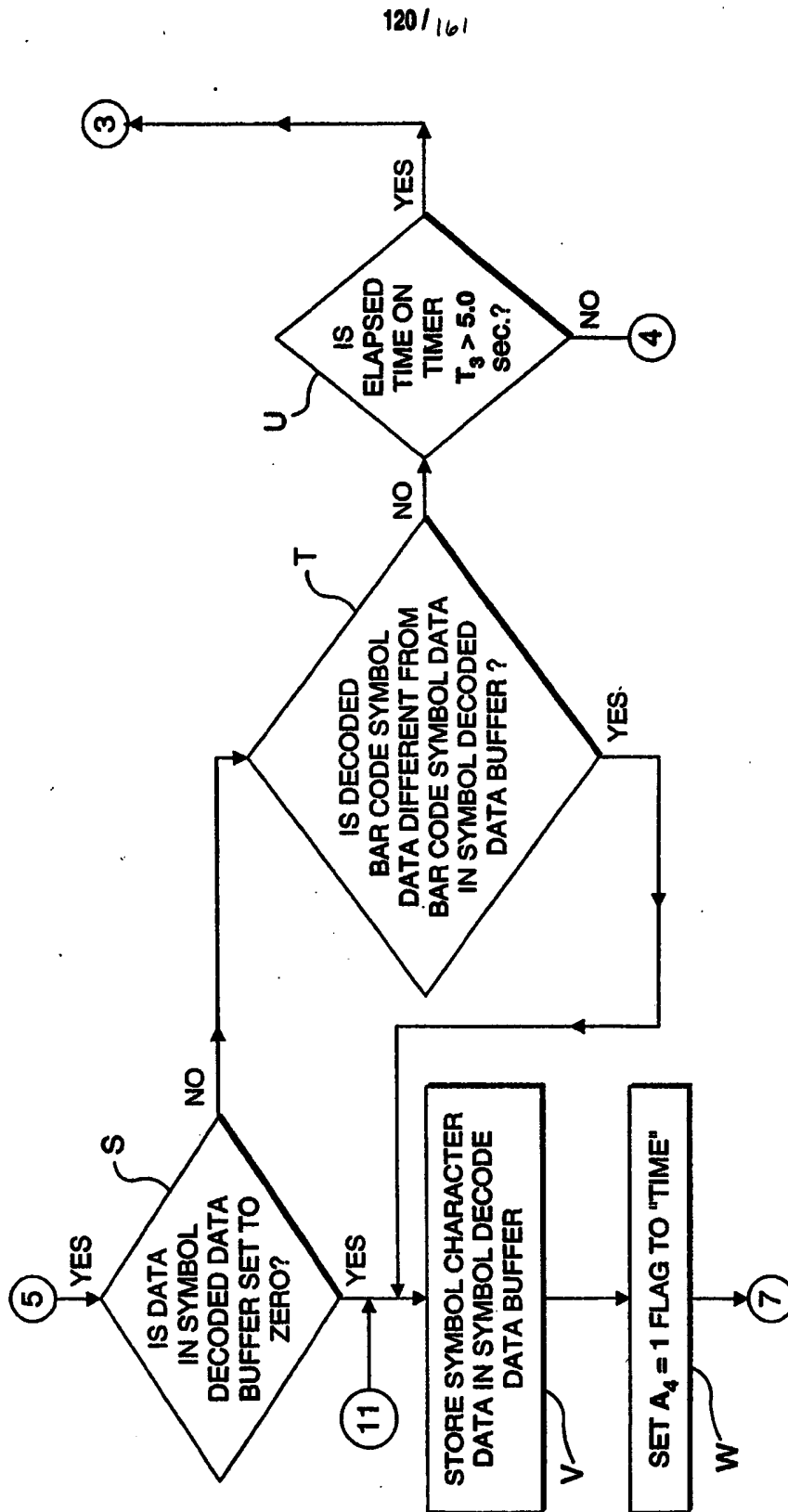


FIG. 35C

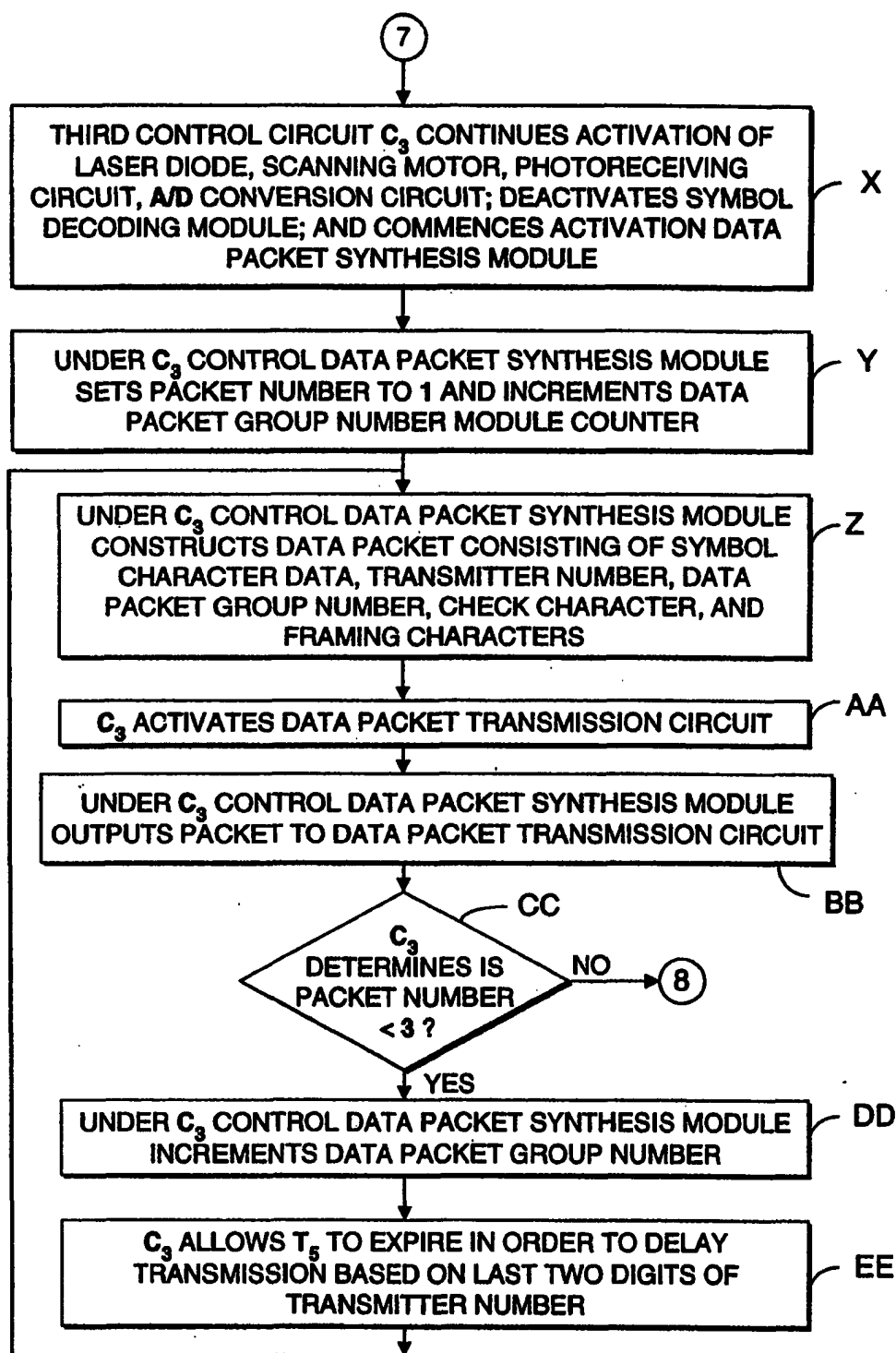


FIG. 35D

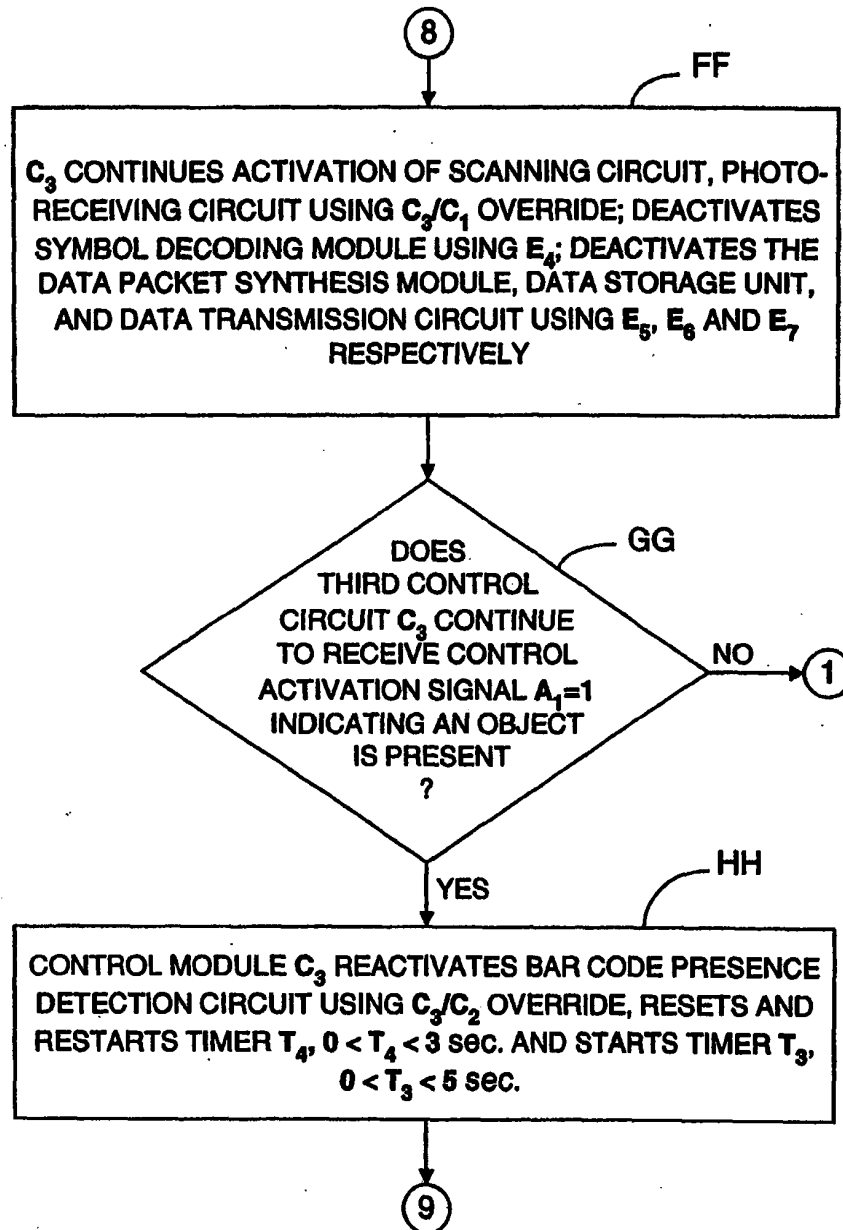


FIG. 35E

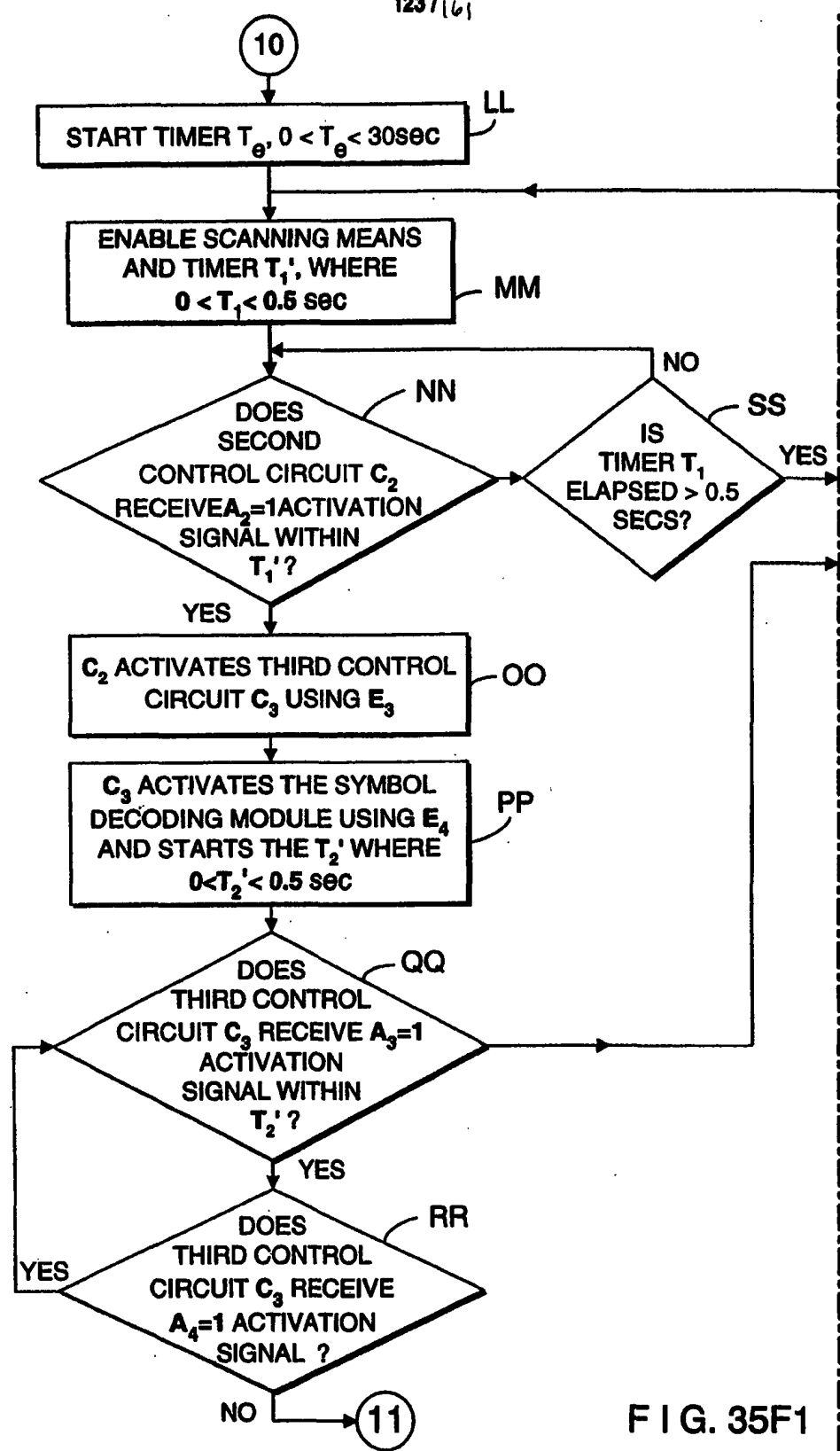
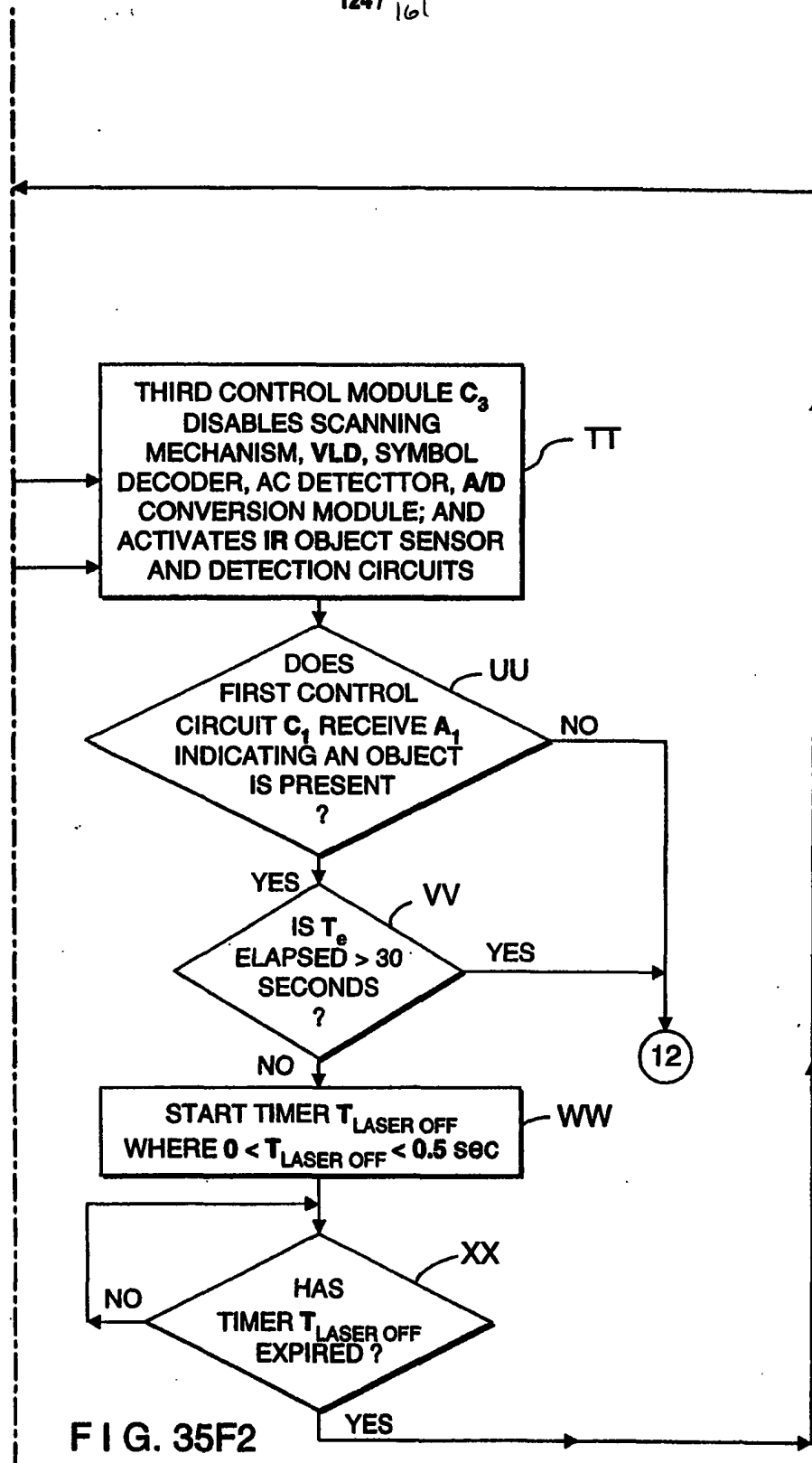
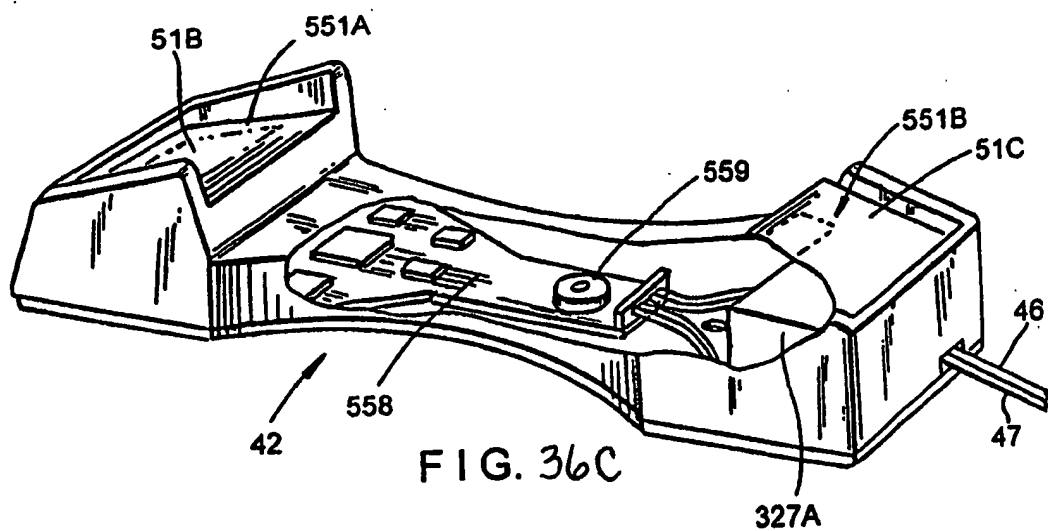
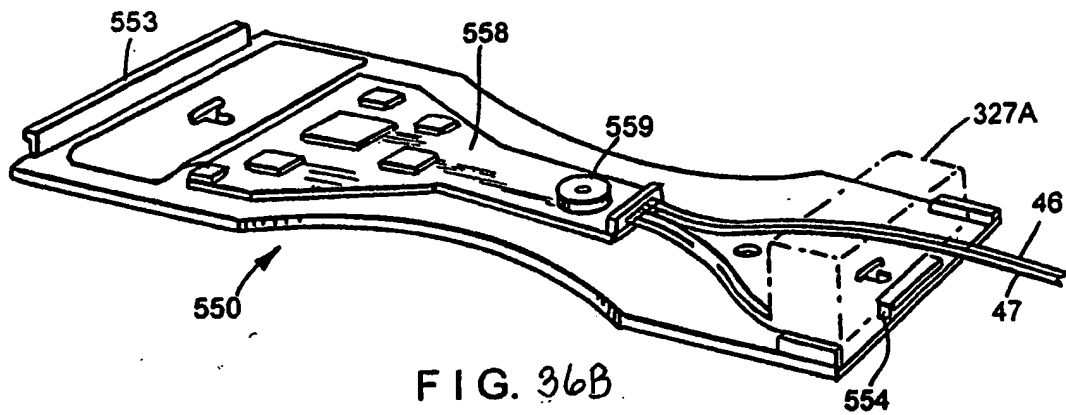
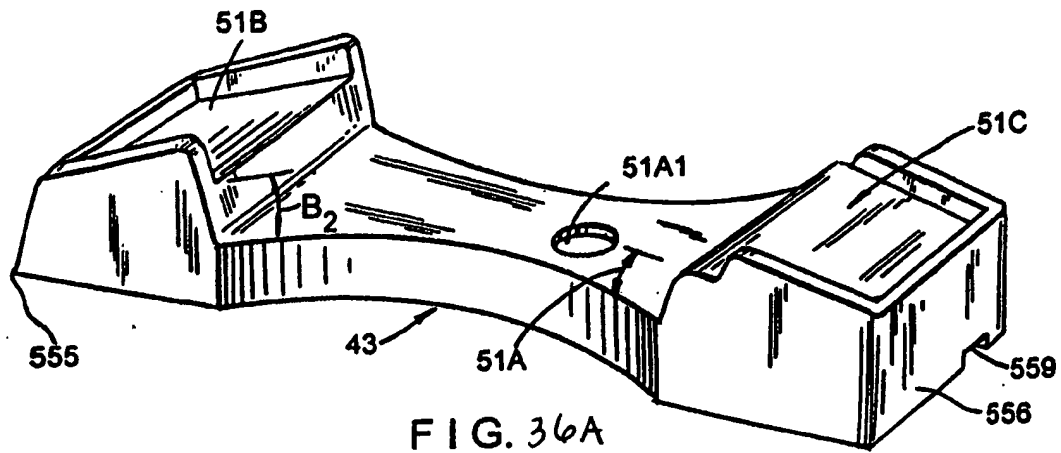


FIG. 35F1



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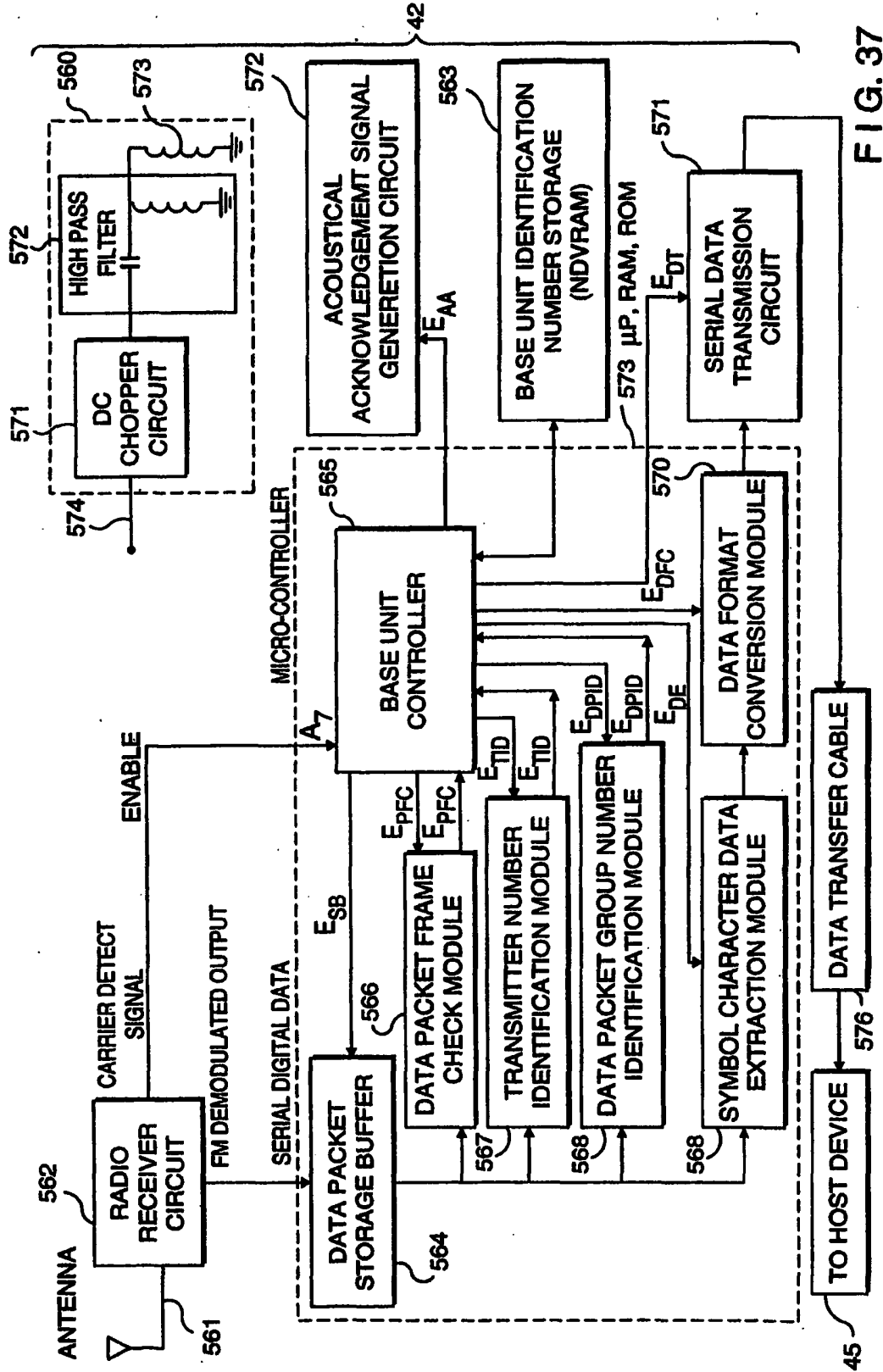
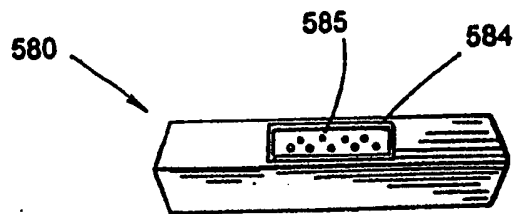
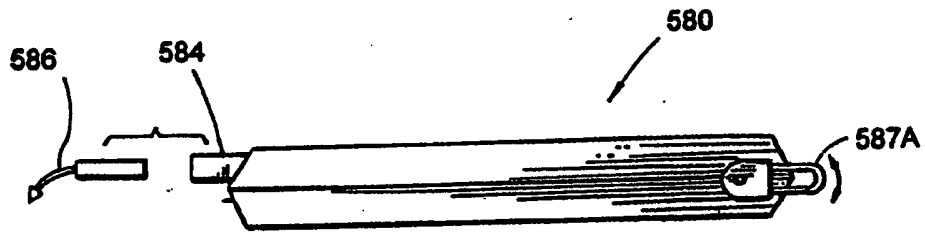
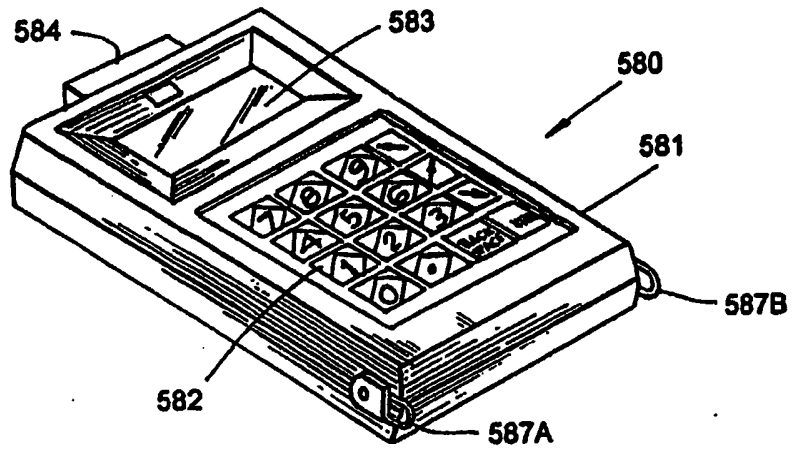


FIG. 37

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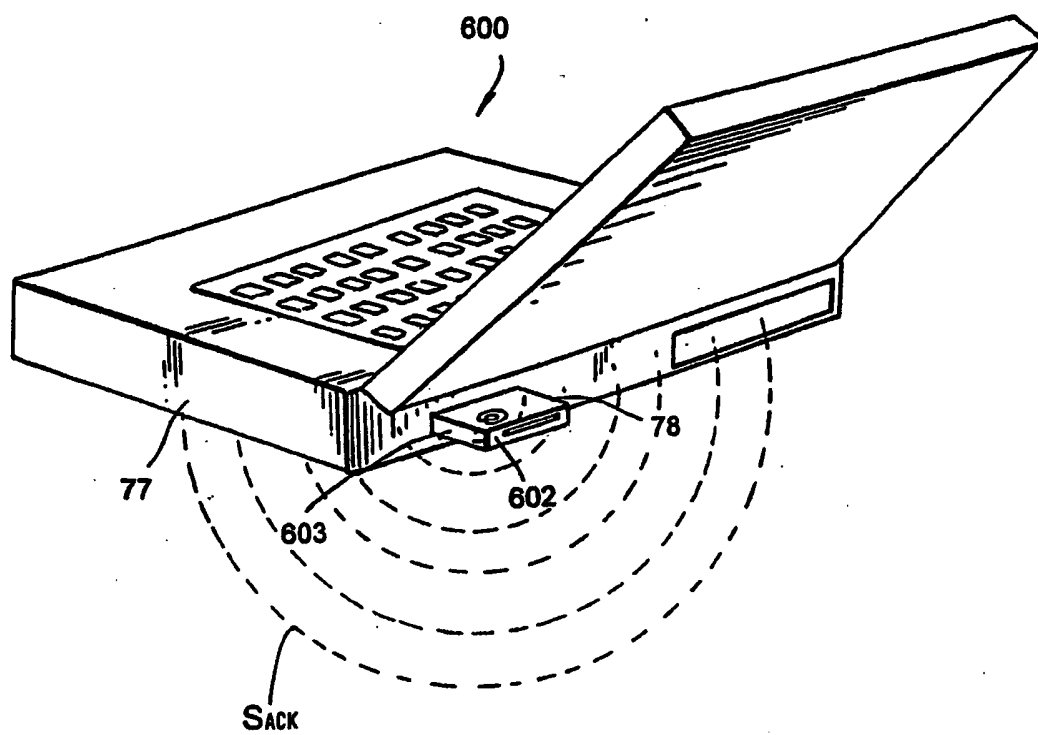


FIG. 39

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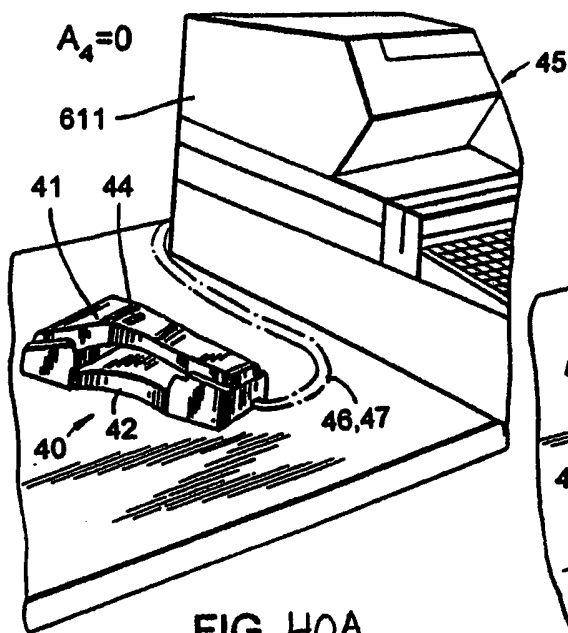


FIG. 40A

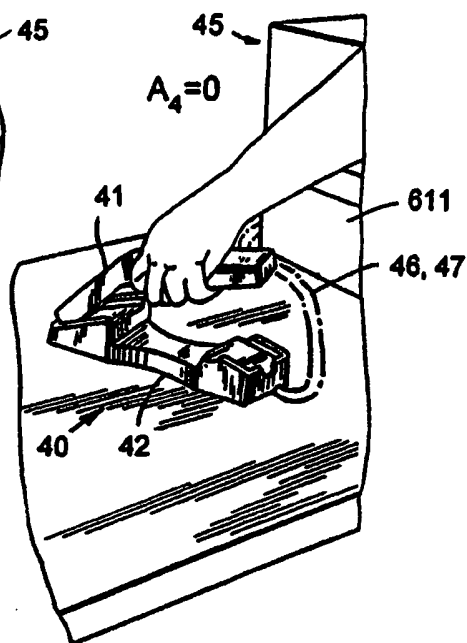


FIG. 40B

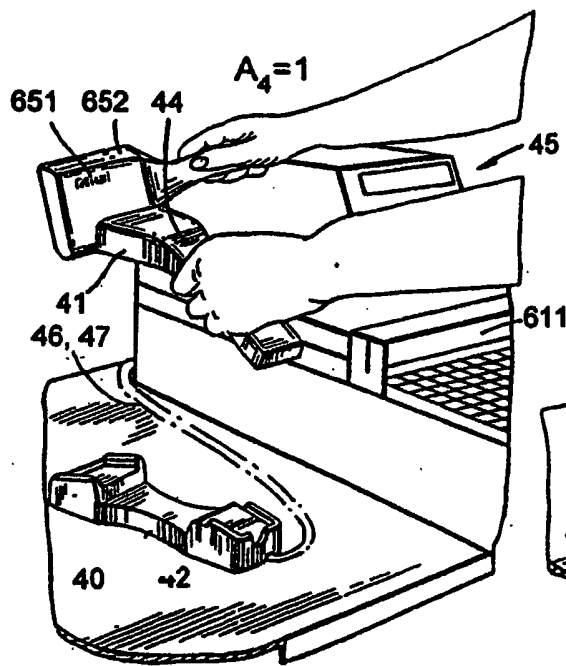


FIG. 40C

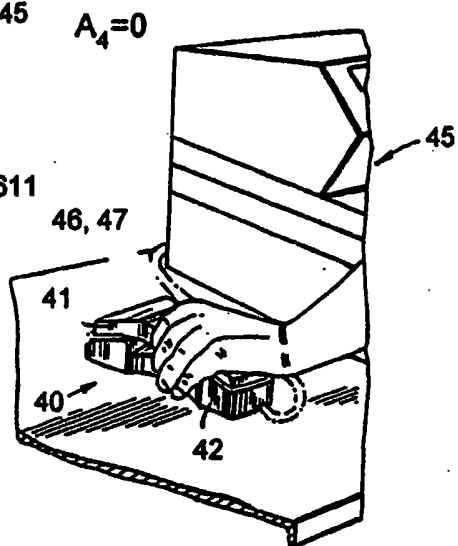


FIG. 40D

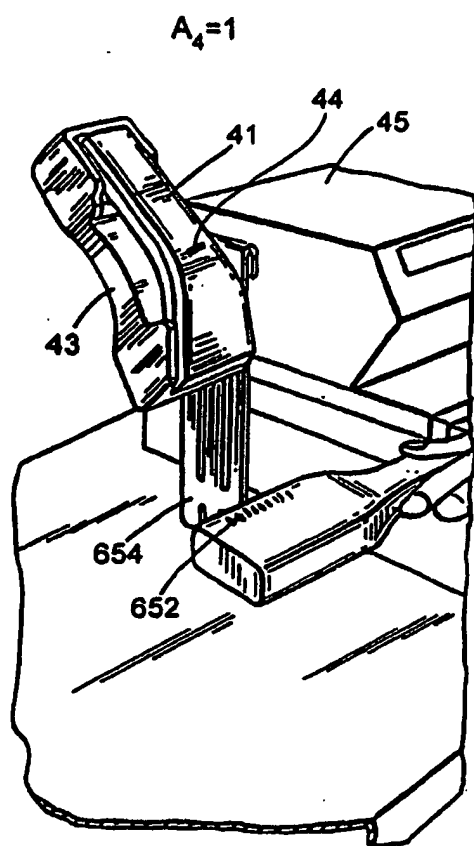


FIG. 41A

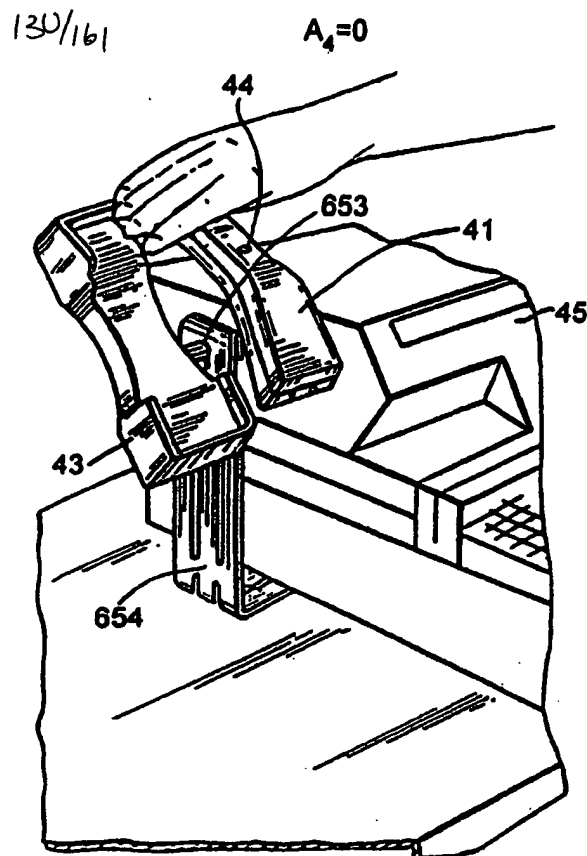


FIG. 41B

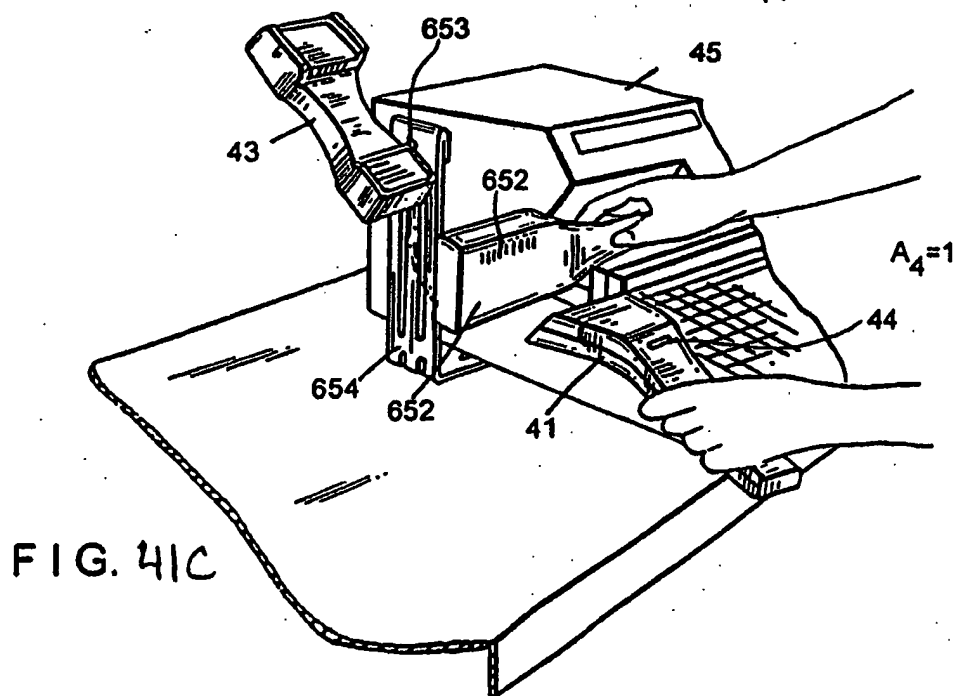


FIG. 41C

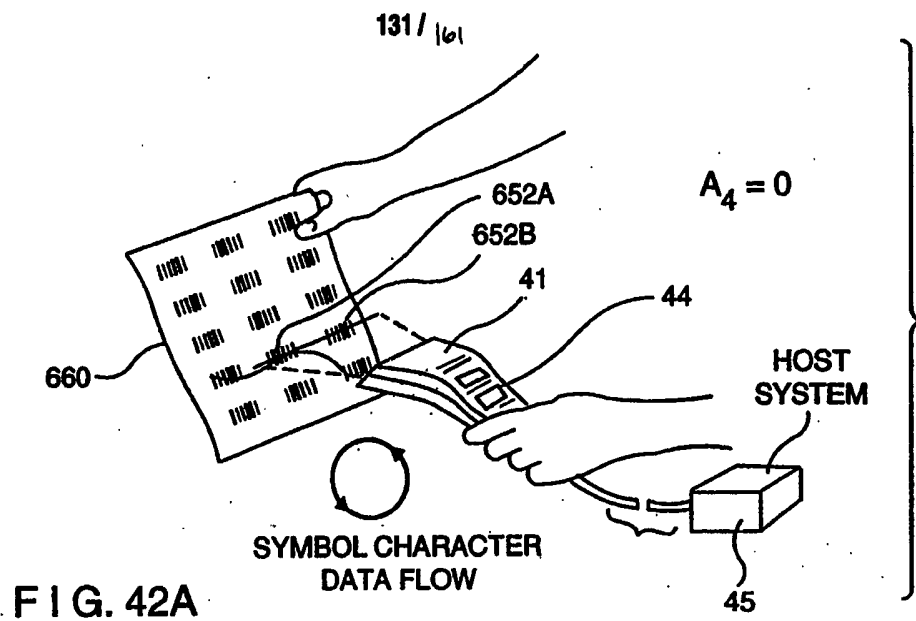


FIG. 42A

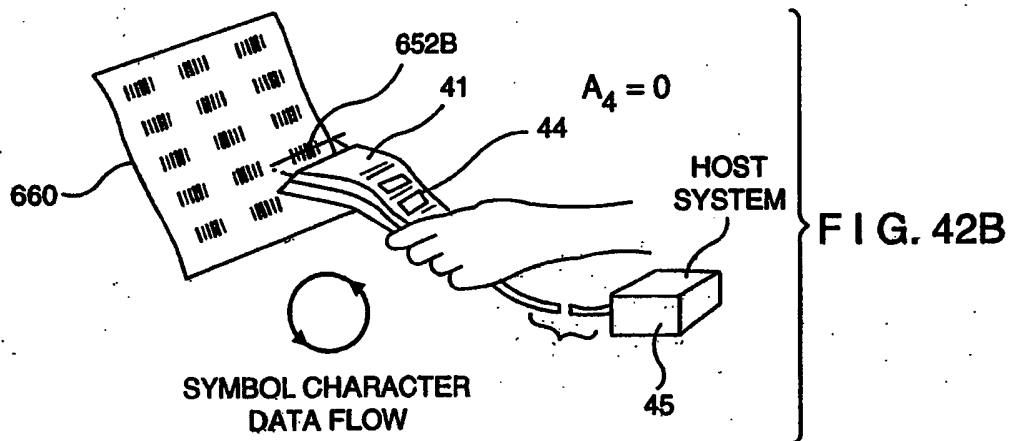


FIG. 42B

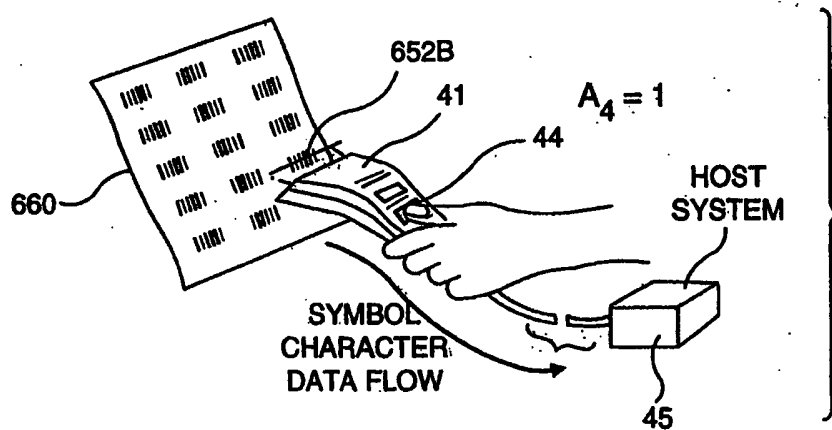
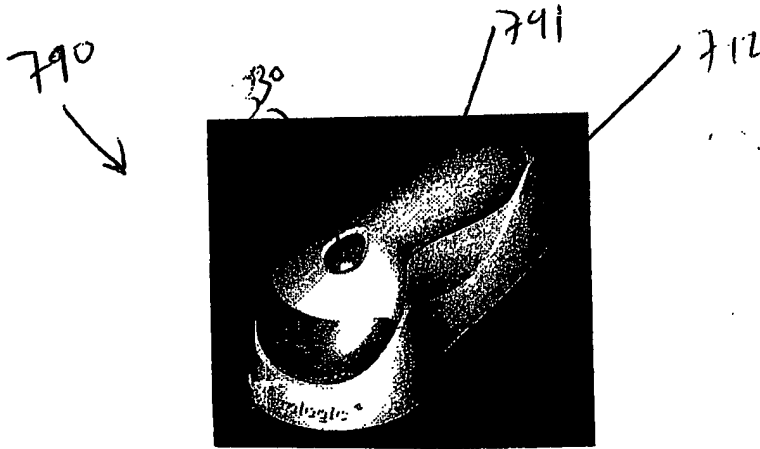


FIG. 42C

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Automatic Barcode
Reading
System with
2-WAY
RF Communication
Link

FIG. 43A



712 FIG. 43B

FIG. 43C

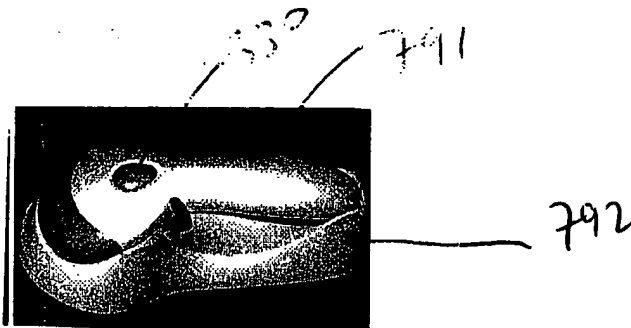


FIG. 43D

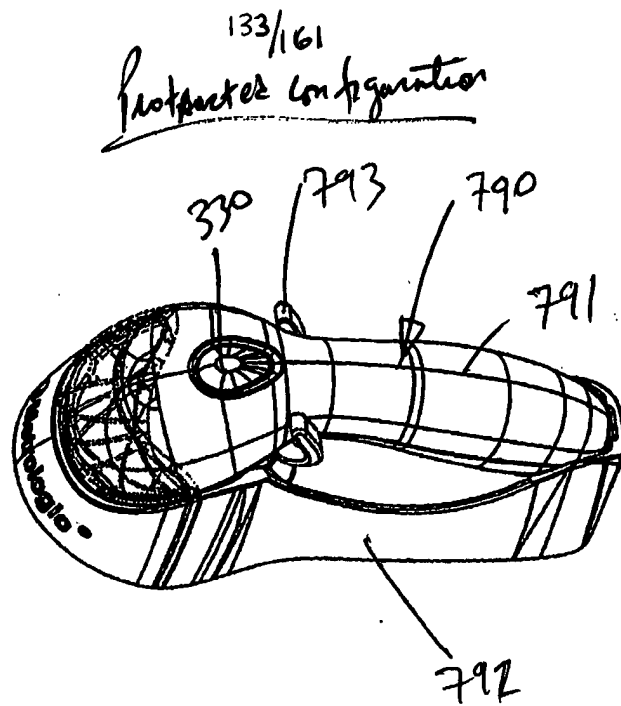


FIG. 43F

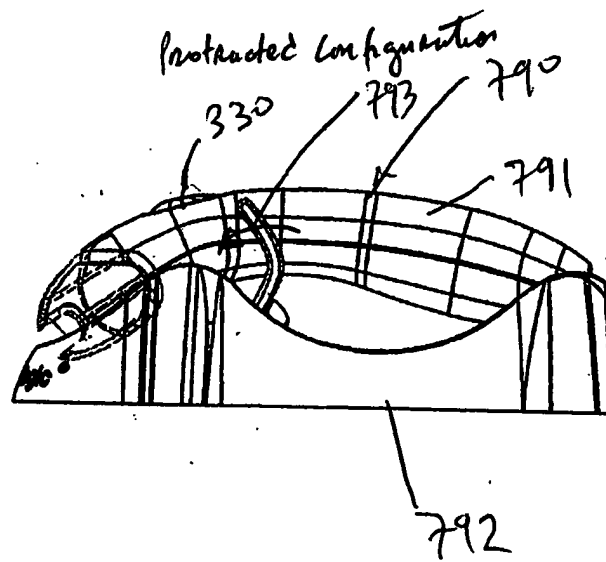


FIG. 43E

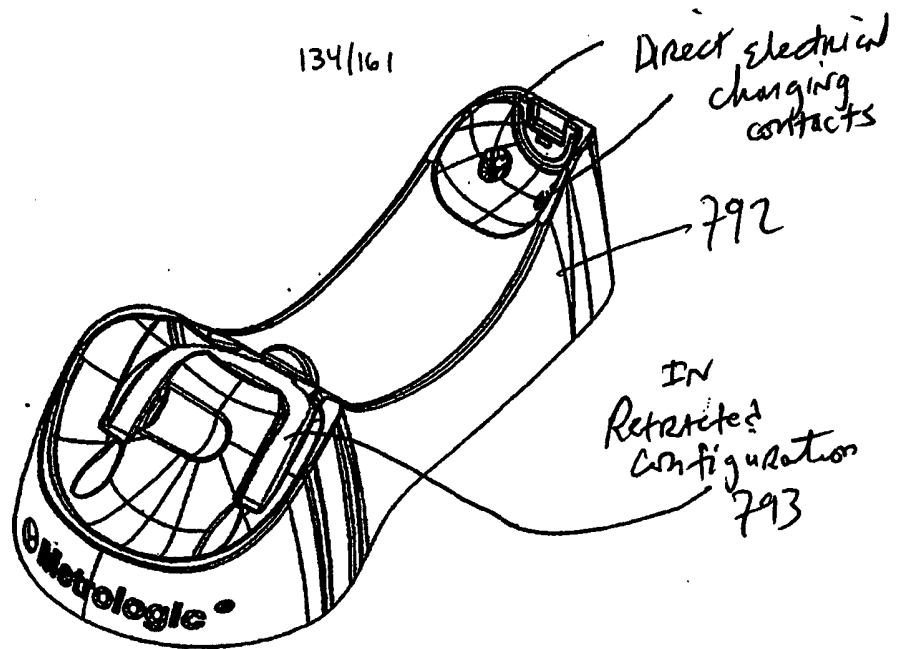


FIG. 43G

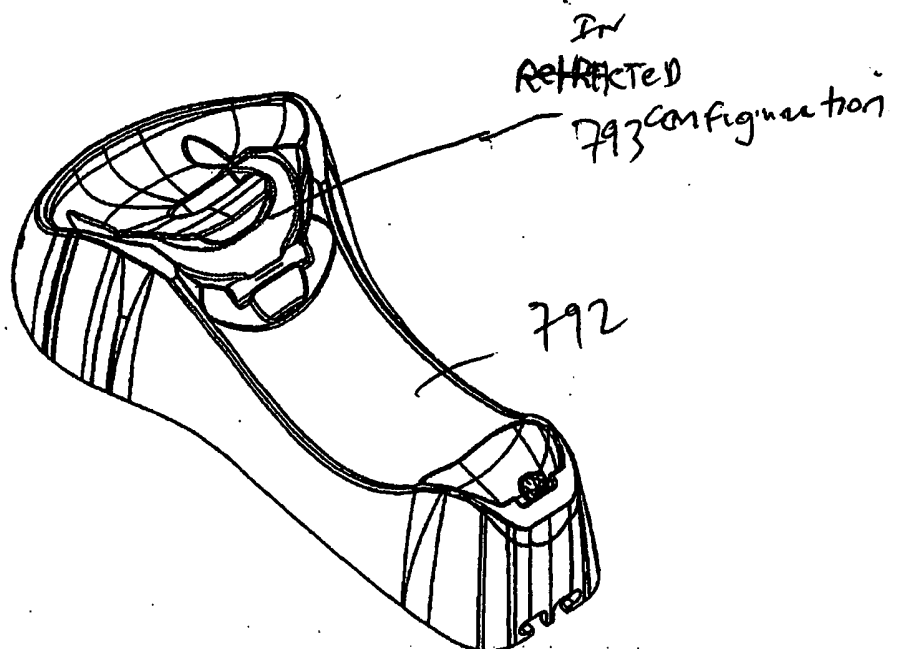


FIG. 43A

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Retracted Configuration

793

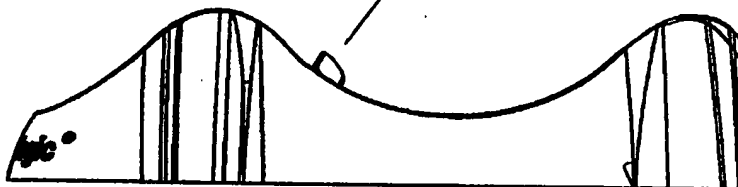


FIG. 43 I 792

Projected Configuration

793

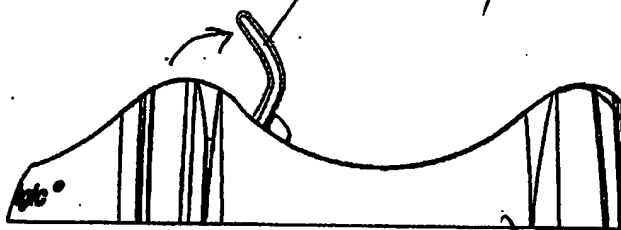


FIG. 43 J 792

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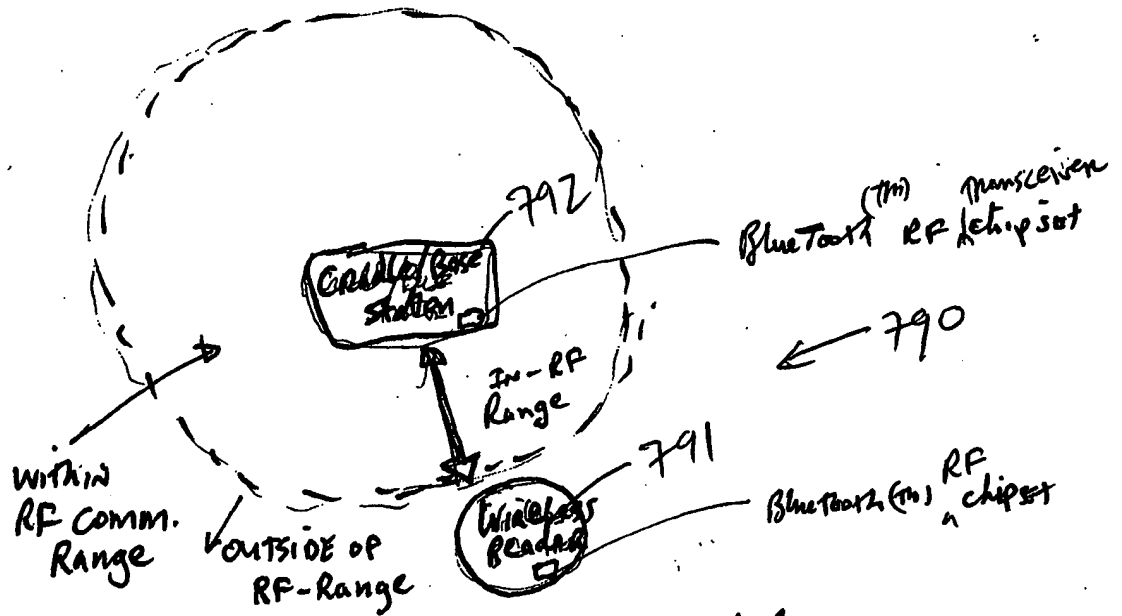


FIG. 44A1

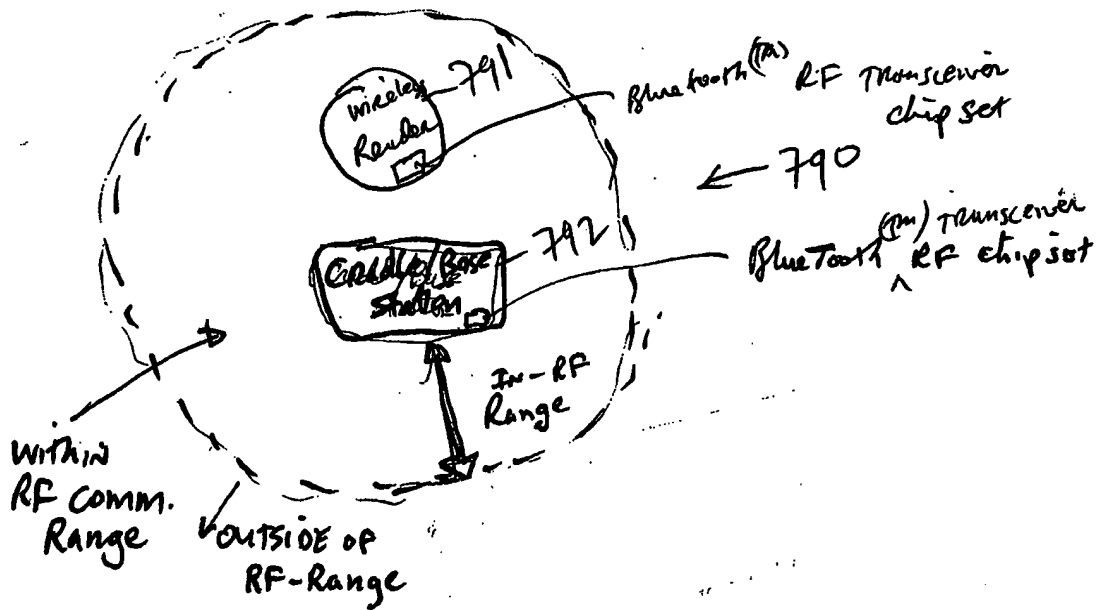
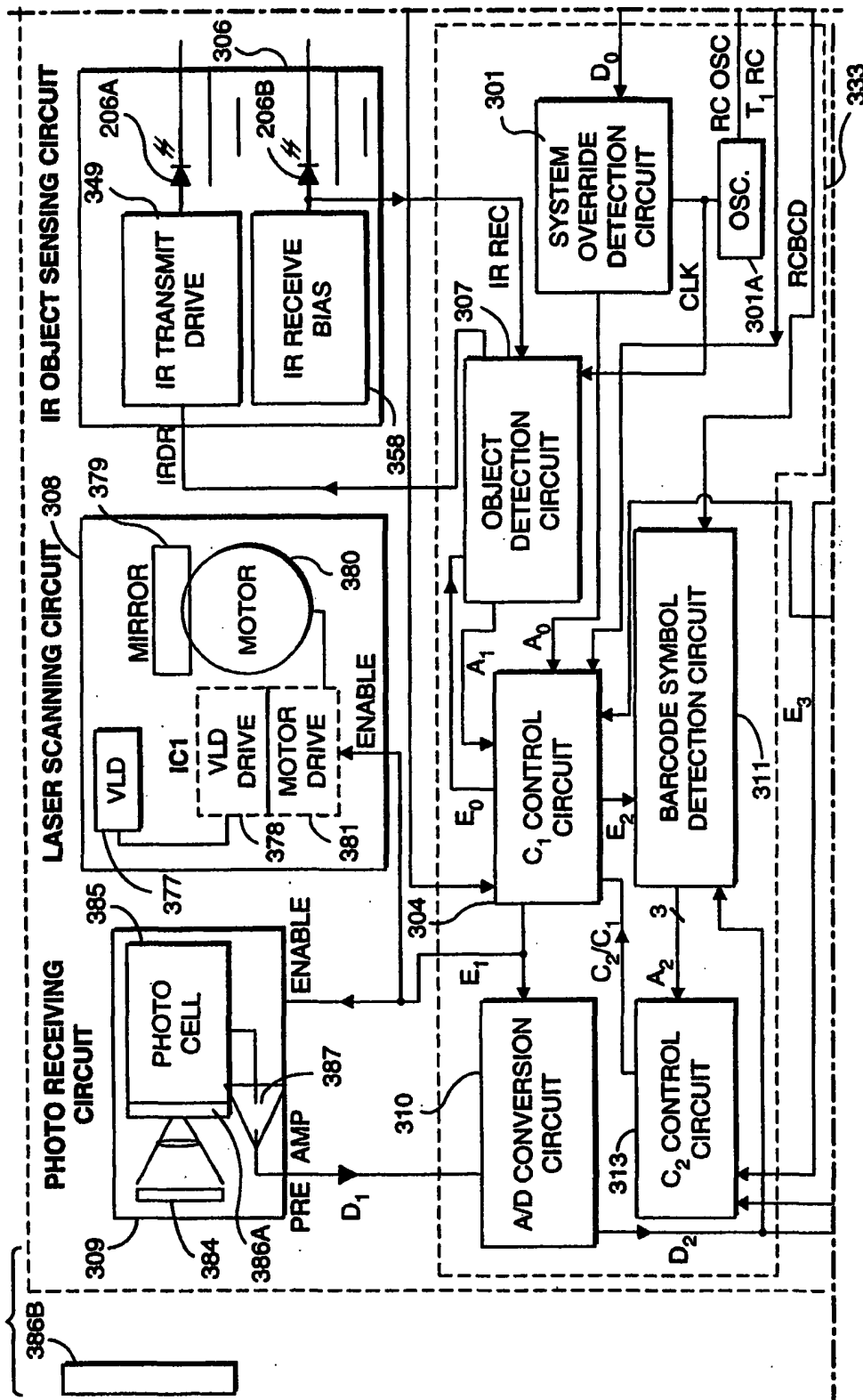


FIG. 44A2

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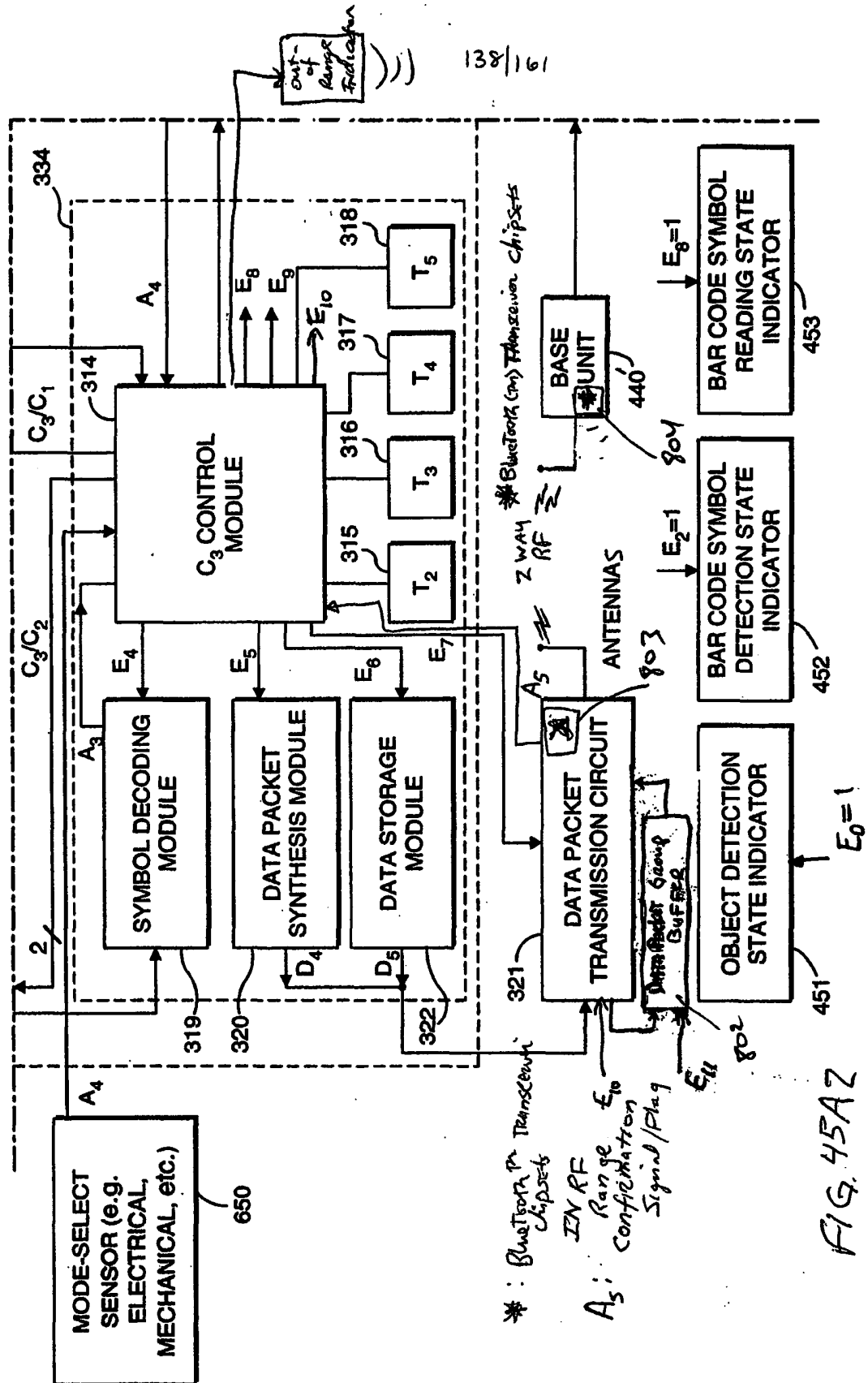
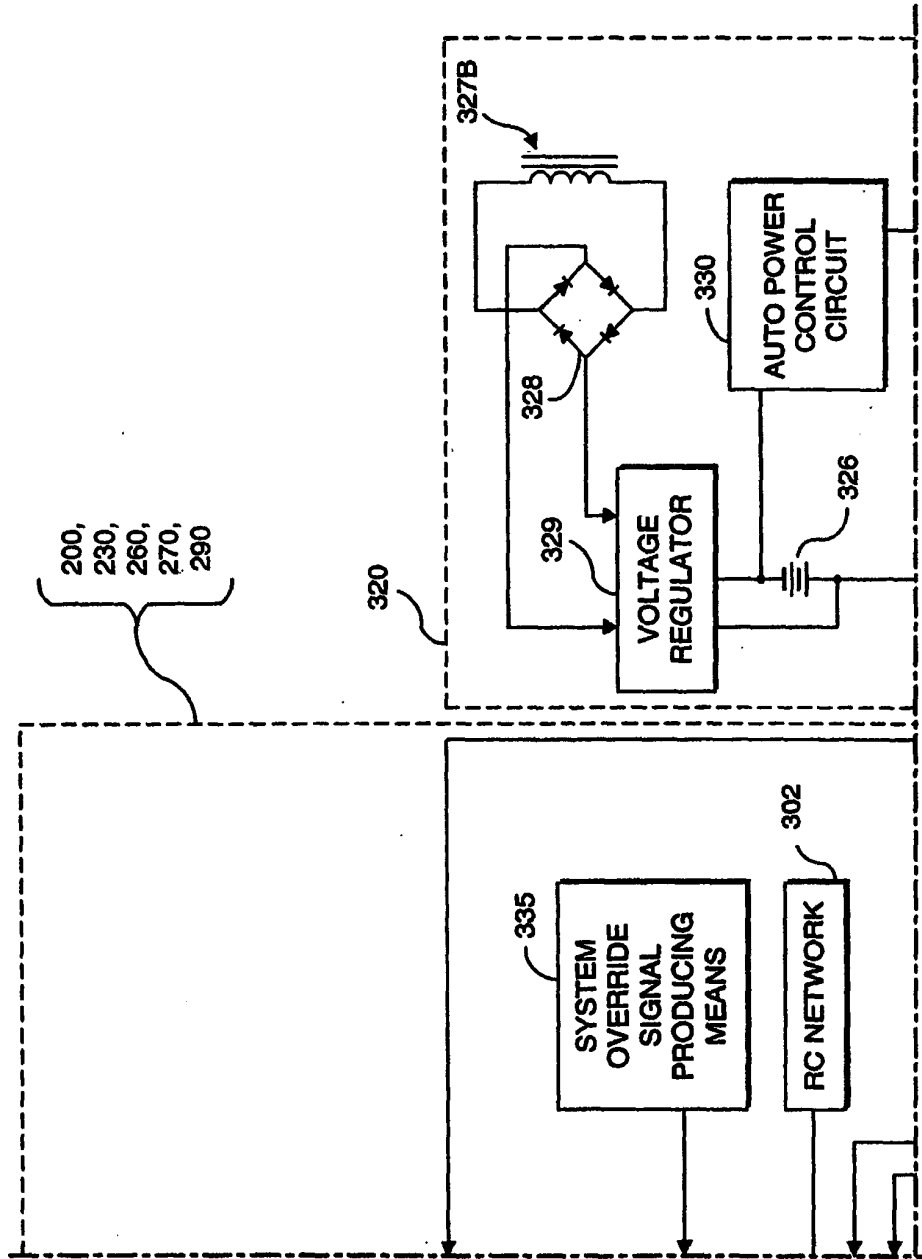


FIG. 45A2



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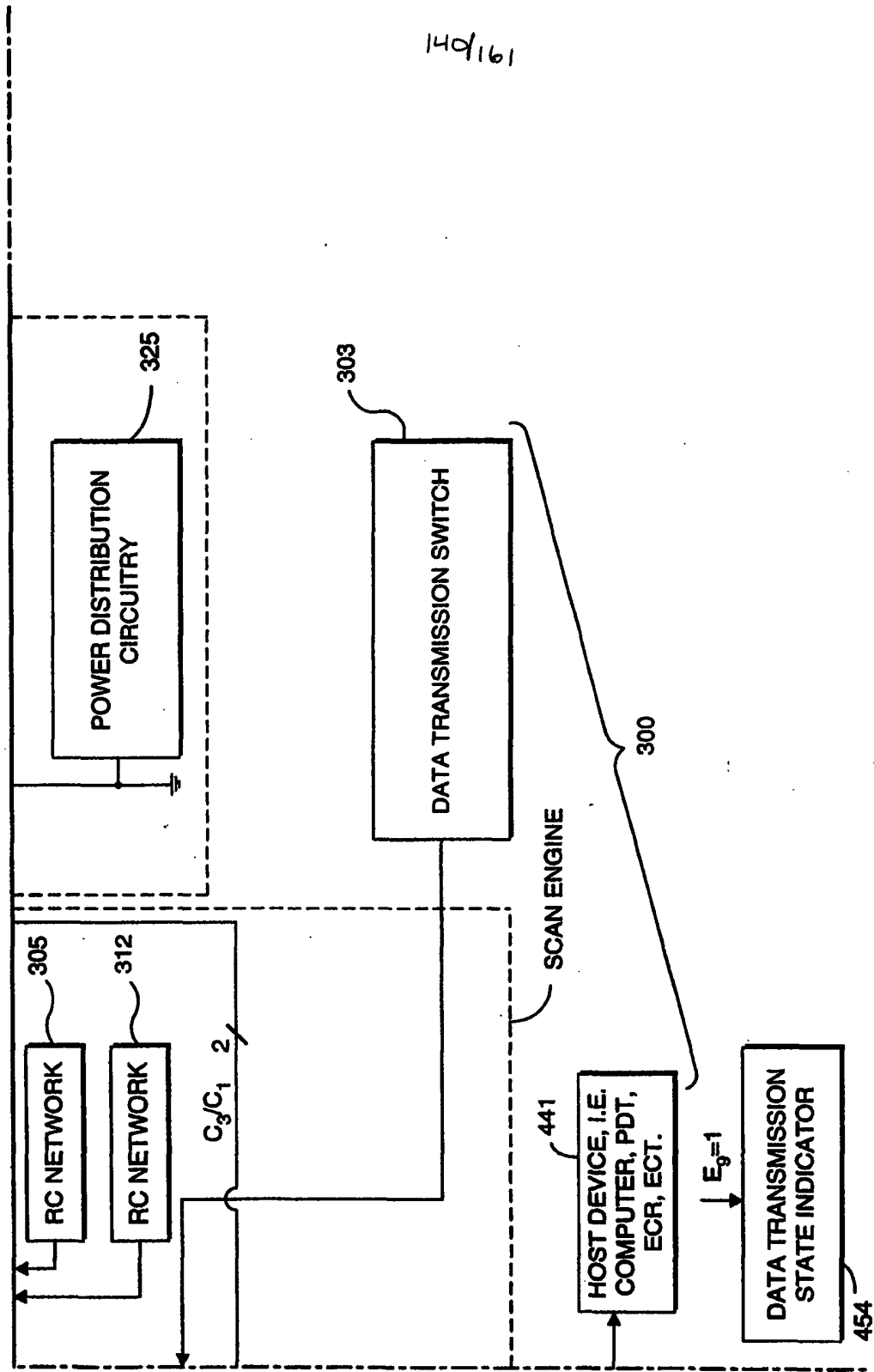


FIG. 45A4

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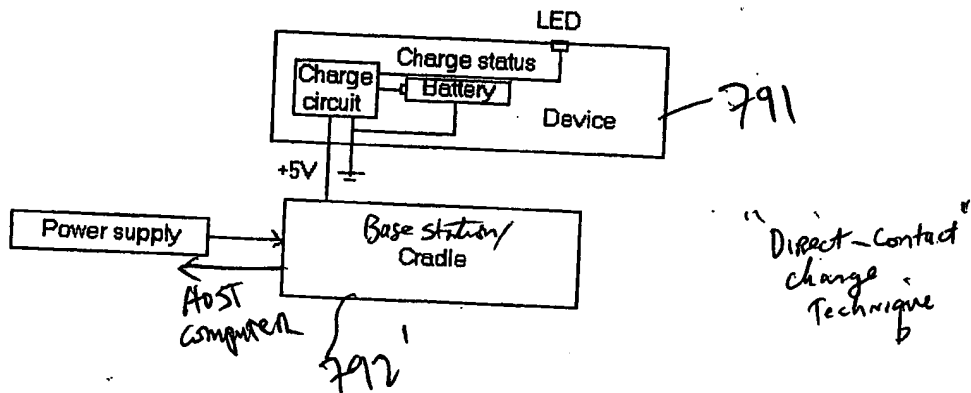


FIG. 45B

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DATA Packet
Transmission VIA
2-WAY RF with Automatic
RP-Range Dependent
Control

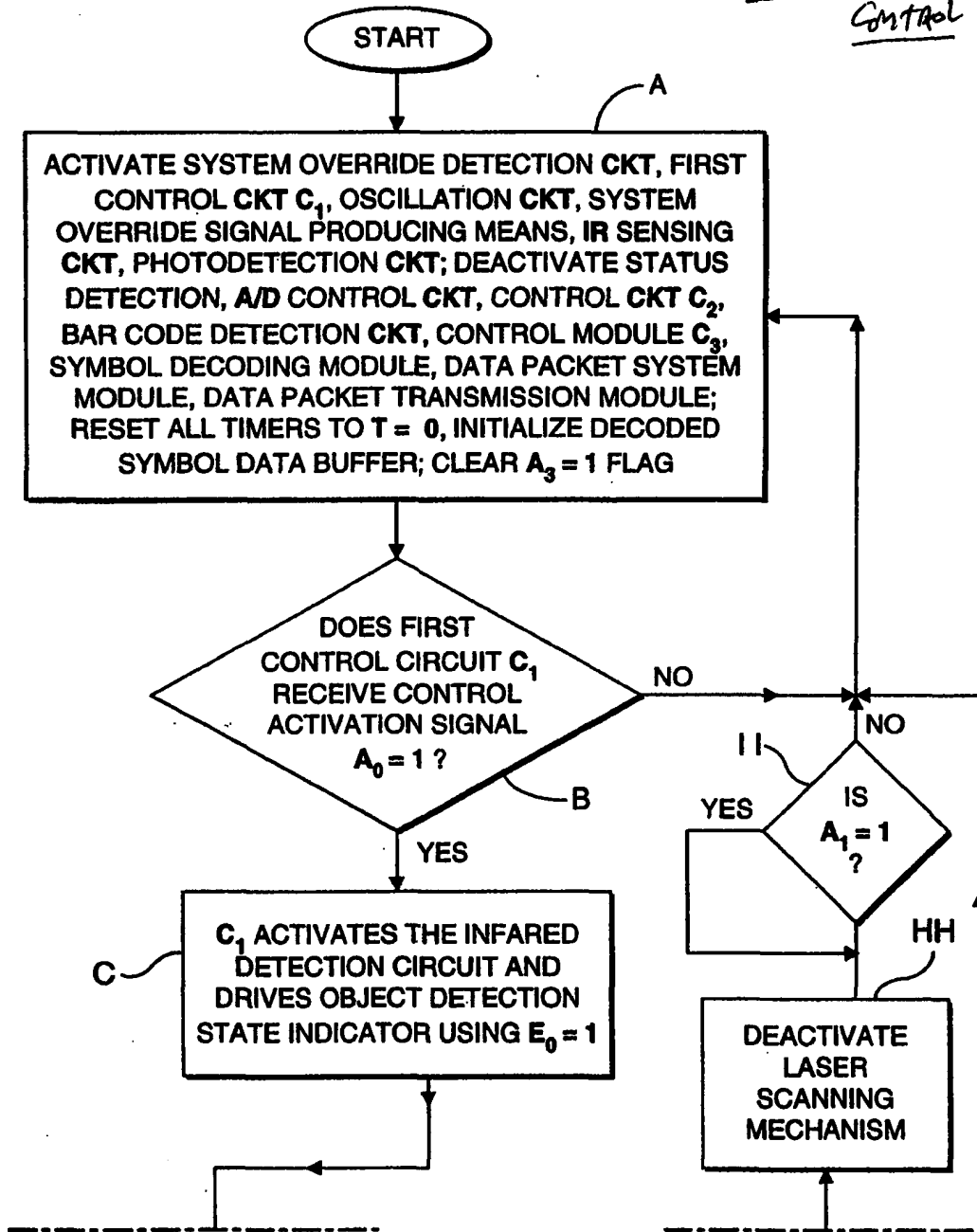
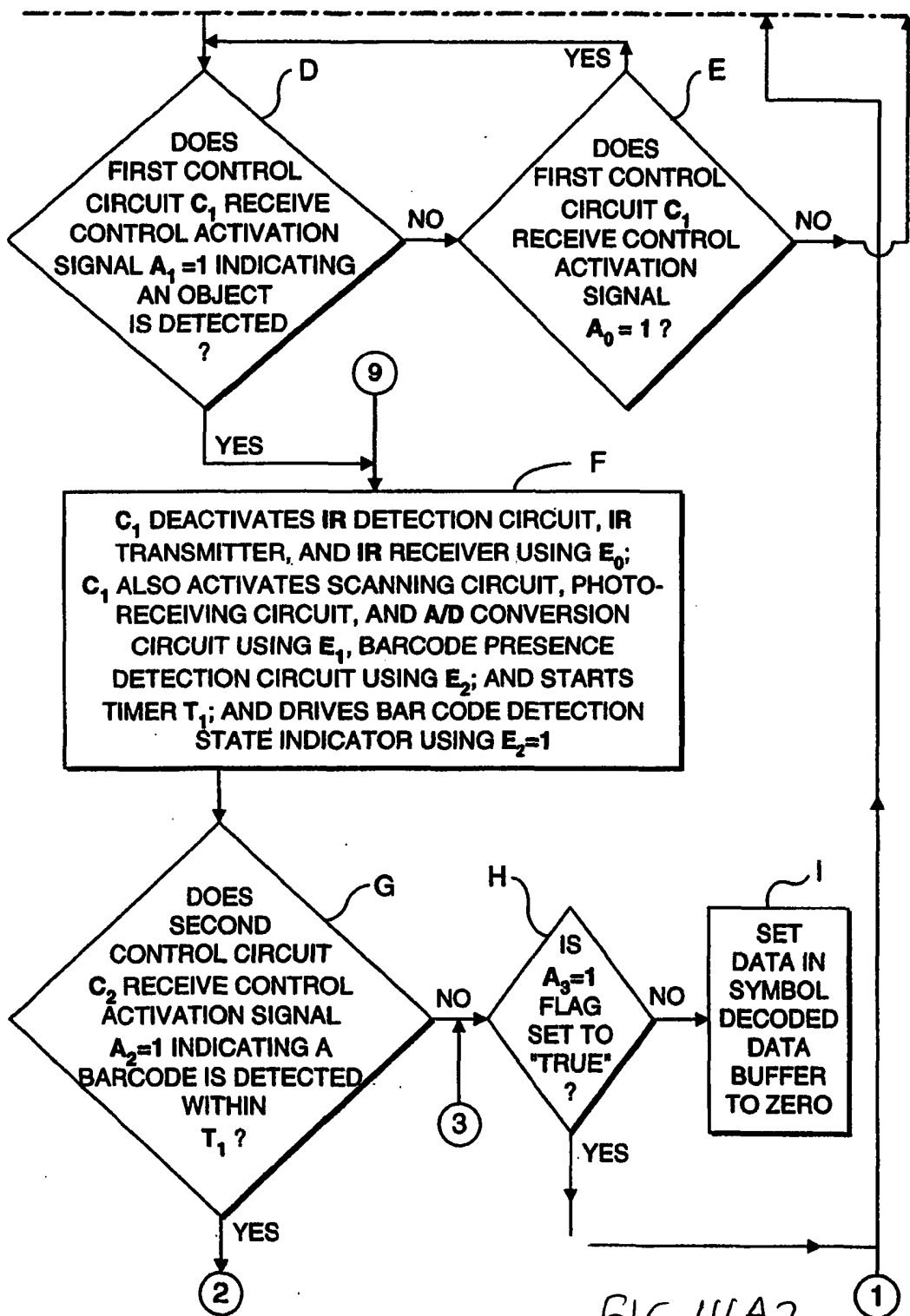
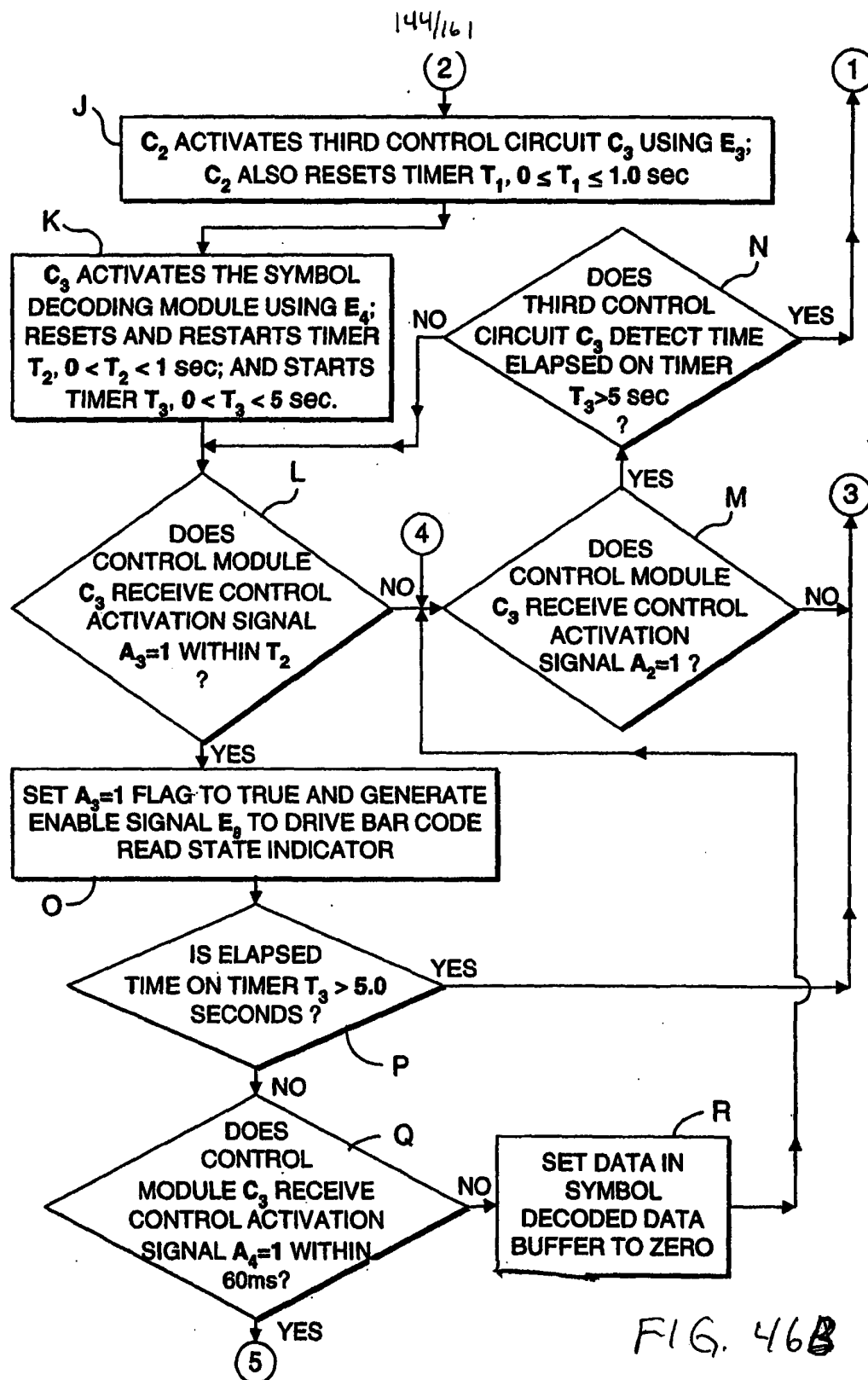


FIG. 46A1





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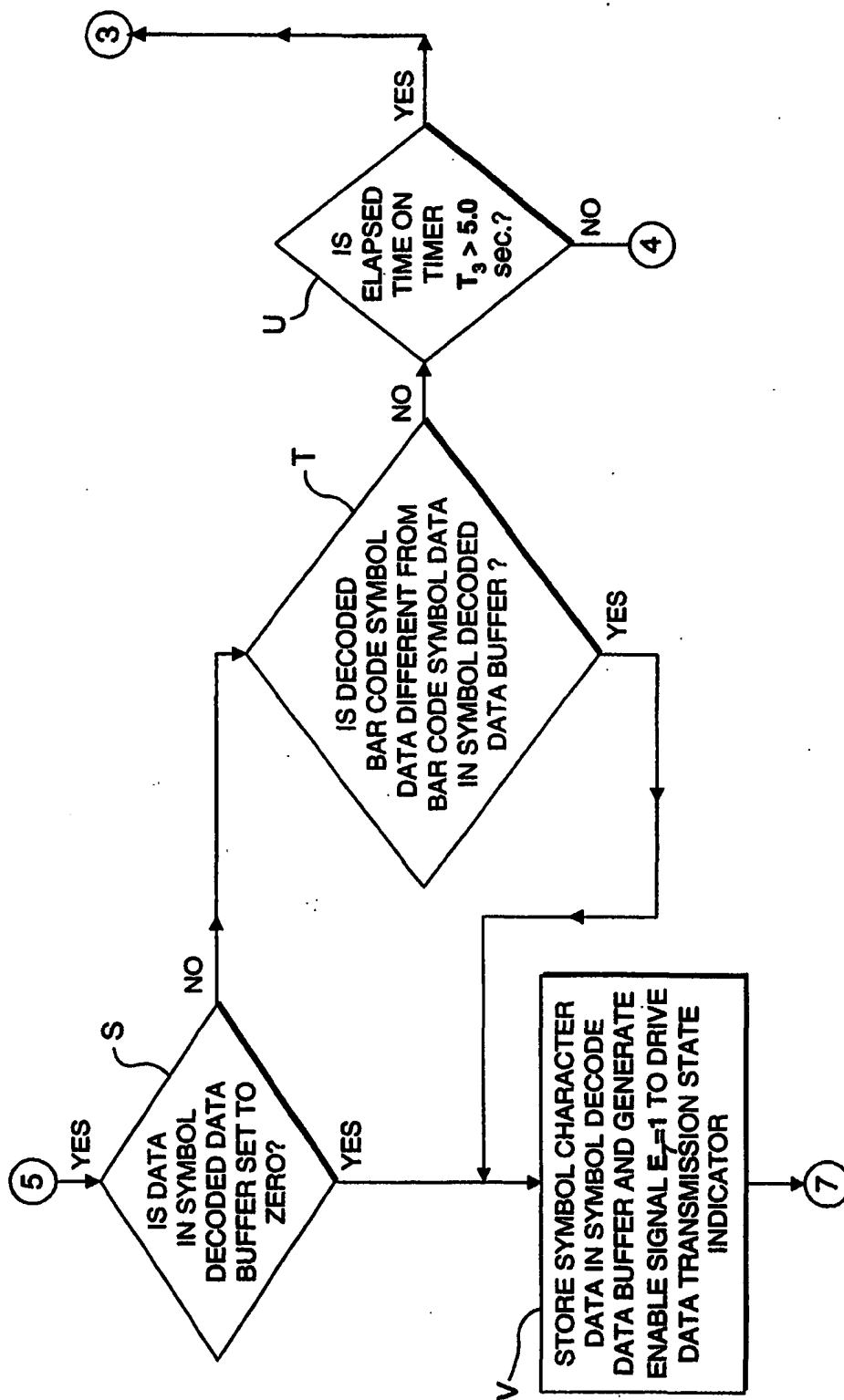


FIG 46C1

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7

THIRD CONTROL CIRCUIT C_3 CONTINUES ACTIVATION OF LASER DIODE, SCANNING MOTOR, PHOTORECEIVING CIRCUIT, A/D CONVERSION CIRCUIT; DEACTIVATES SYMBOL DECODING MODULE; AND COMMENCES ACTIVATION DATA PACKET SYNTHESIS MODULE

W

UNDER C_3 CONTROL DATA PACKET SYNTHESIS MODULE CONSTRUCTS DATA PACKET CONSISTING OF SYMBOL CHARACTER DATA, TRANSMITTER NUMBER, DATA PACKET GROUP NUMBER, CHECK CHARACTER AND FRAMING CHARACTERS

X

IS IN-RF RANGE CONFIRMATION Signal $A_5=1$?

NO

YES

Y

NO

ARE DATA PACKET GROUP(S) STORED IN DATA PACKET GROUP BUFFER?

Z

YES

C_3 Control Module Generates Enable Signal $E_{11}=1$ Reloading Buffered Data Packet Group(s) into Data Packet Transmission Circuit

AA

Control Module C_3 Generates Enable Signal $E_{10}=1$ loading currently Synthesized Data packet Group into Data Packet Transmission Circuit

BB

11

FIG. 46 C2

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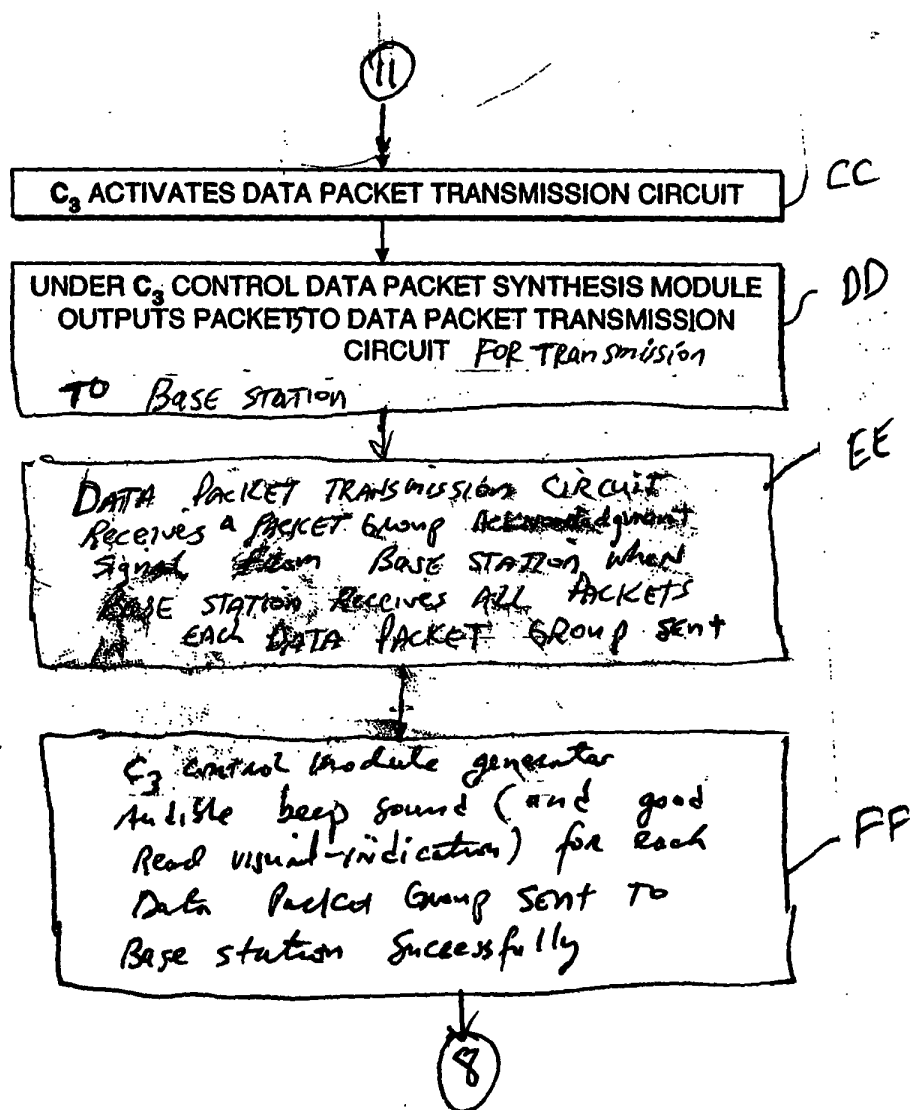


FIG. 46C3

1481161

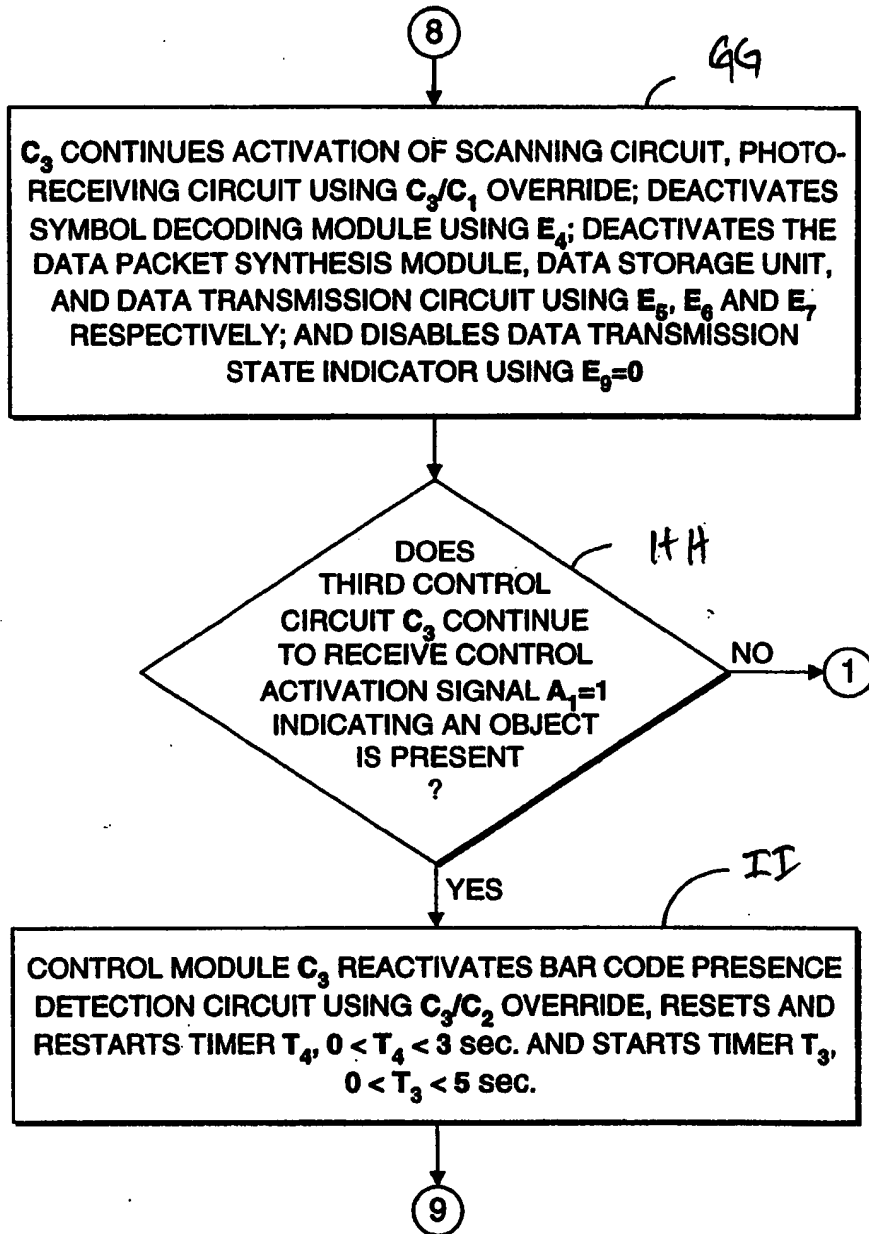


FIG 46 C4

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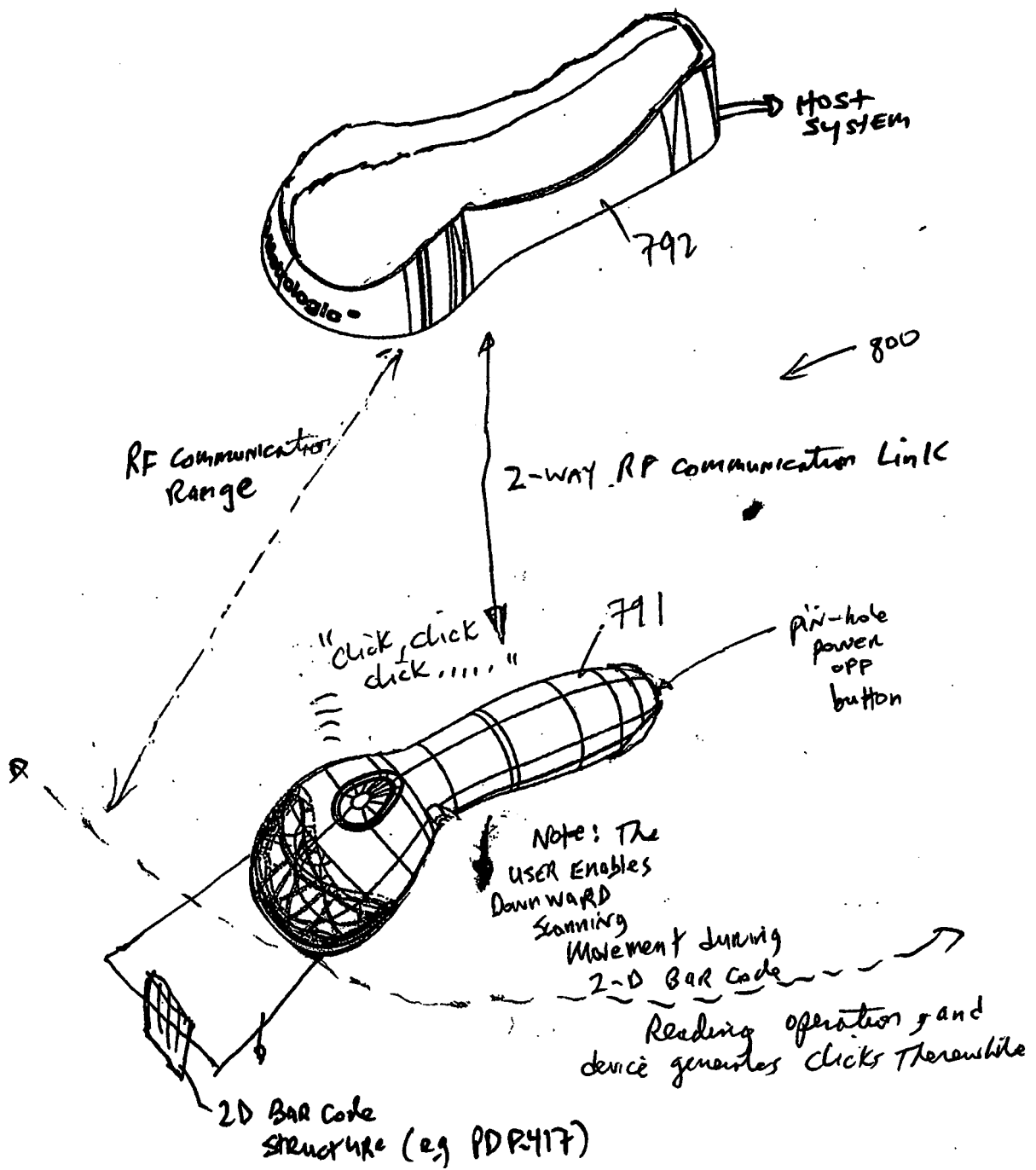
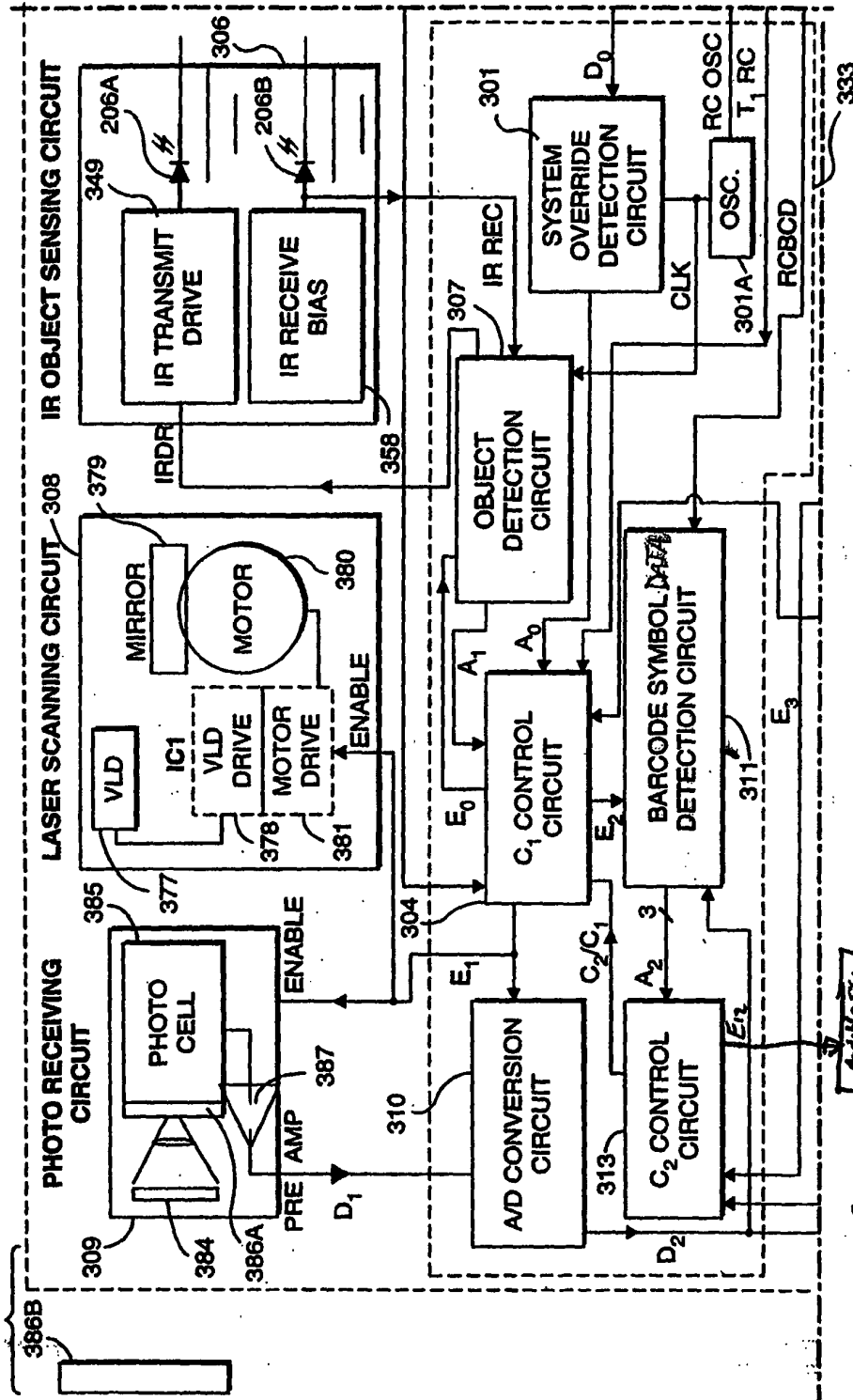


FIG. 47

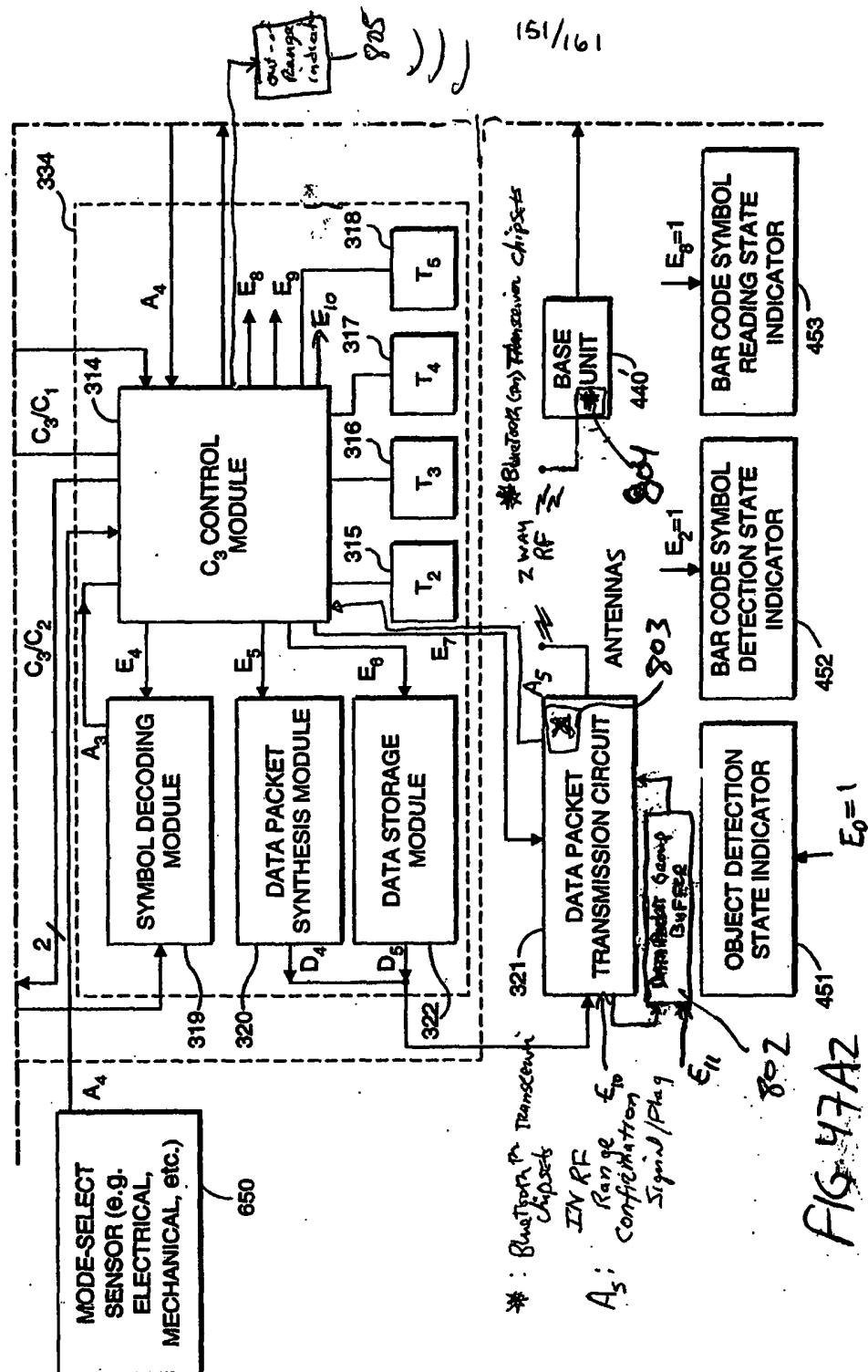
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806 FIG. 47A1
(pico-electric transducer)

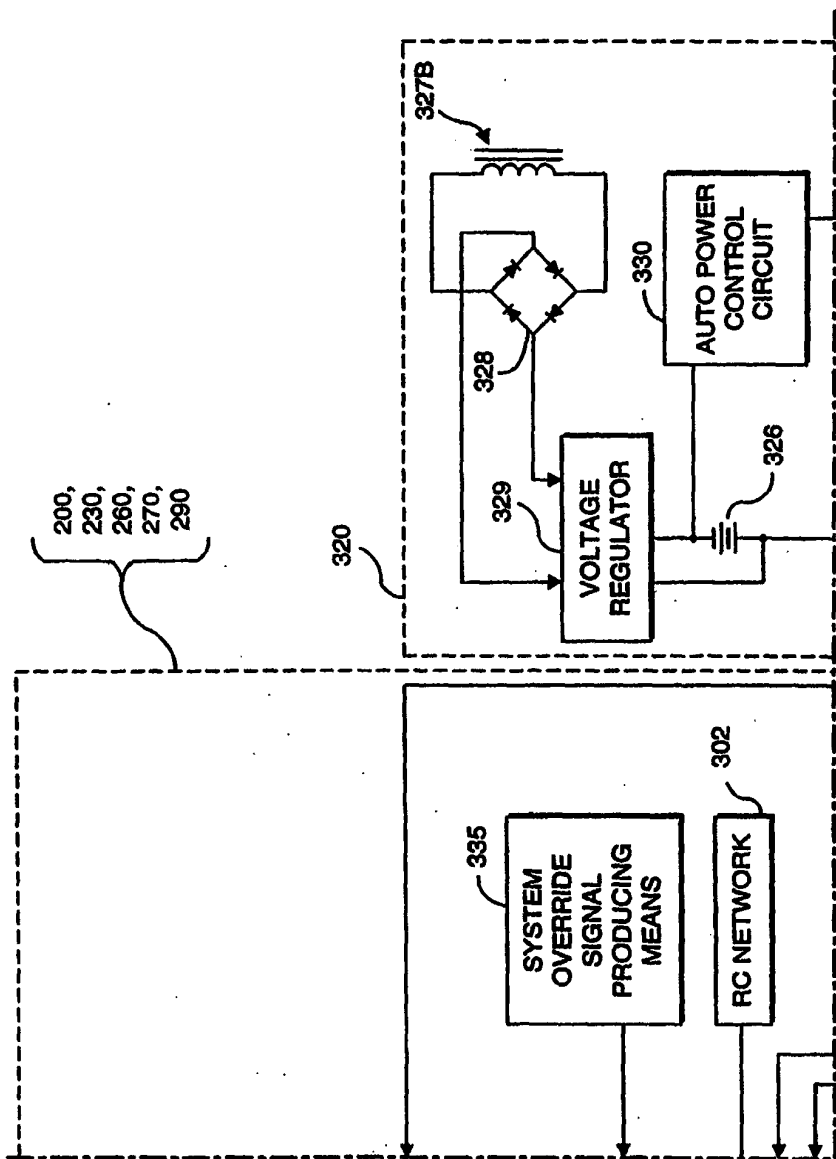
Active Scan Data Capture Software Transducer

800

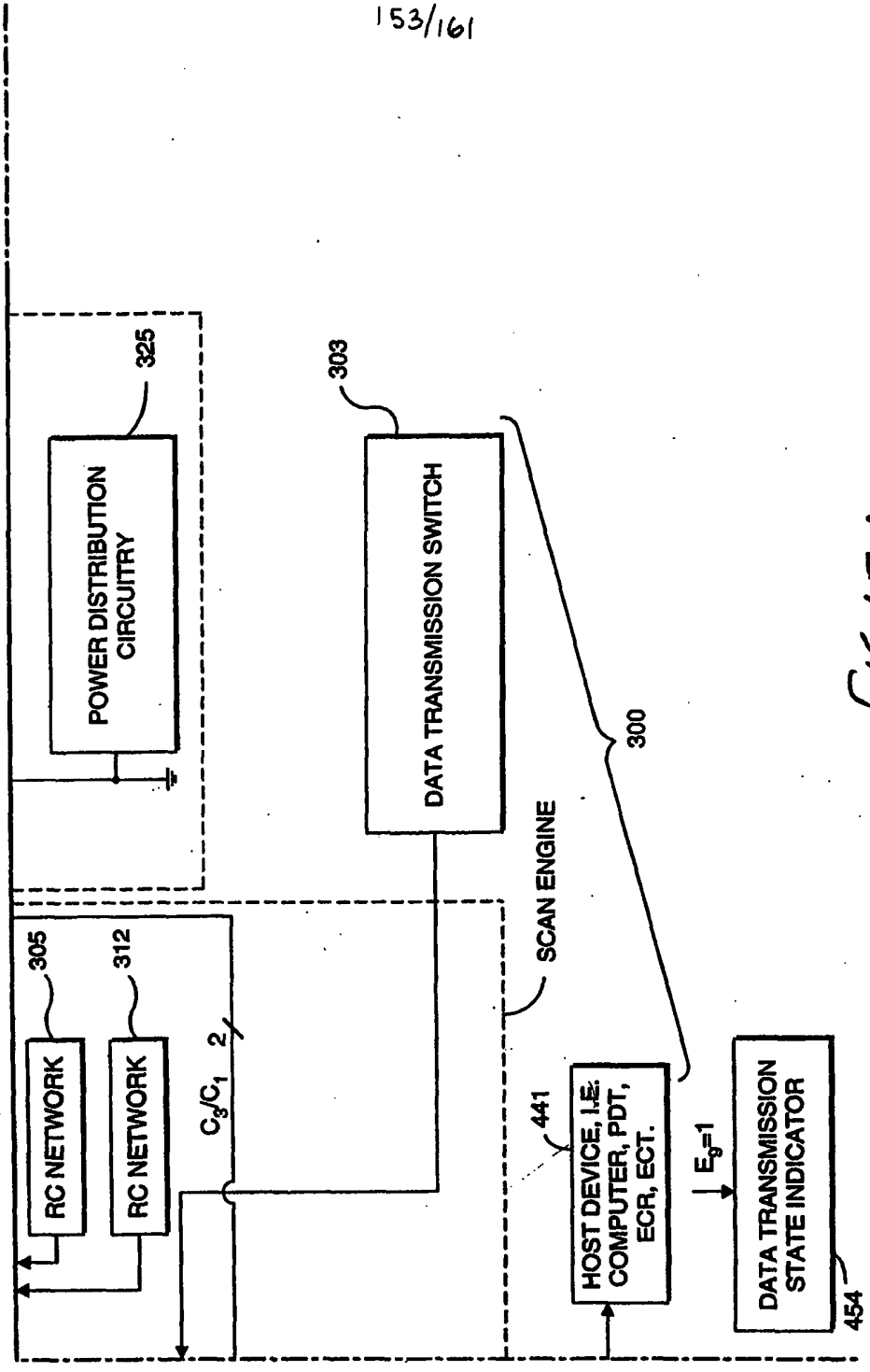


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FIG 47A3



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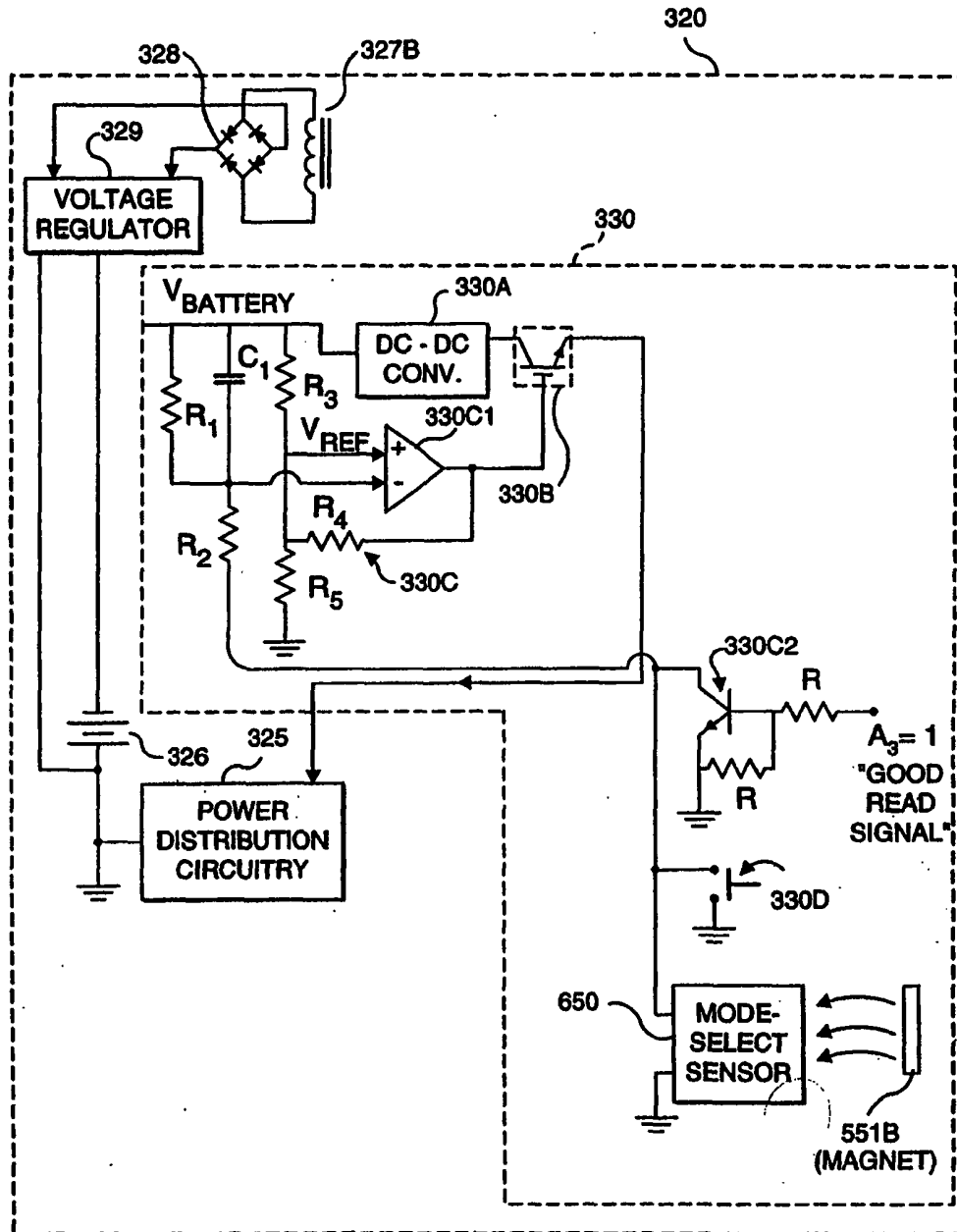


FIG. 47B

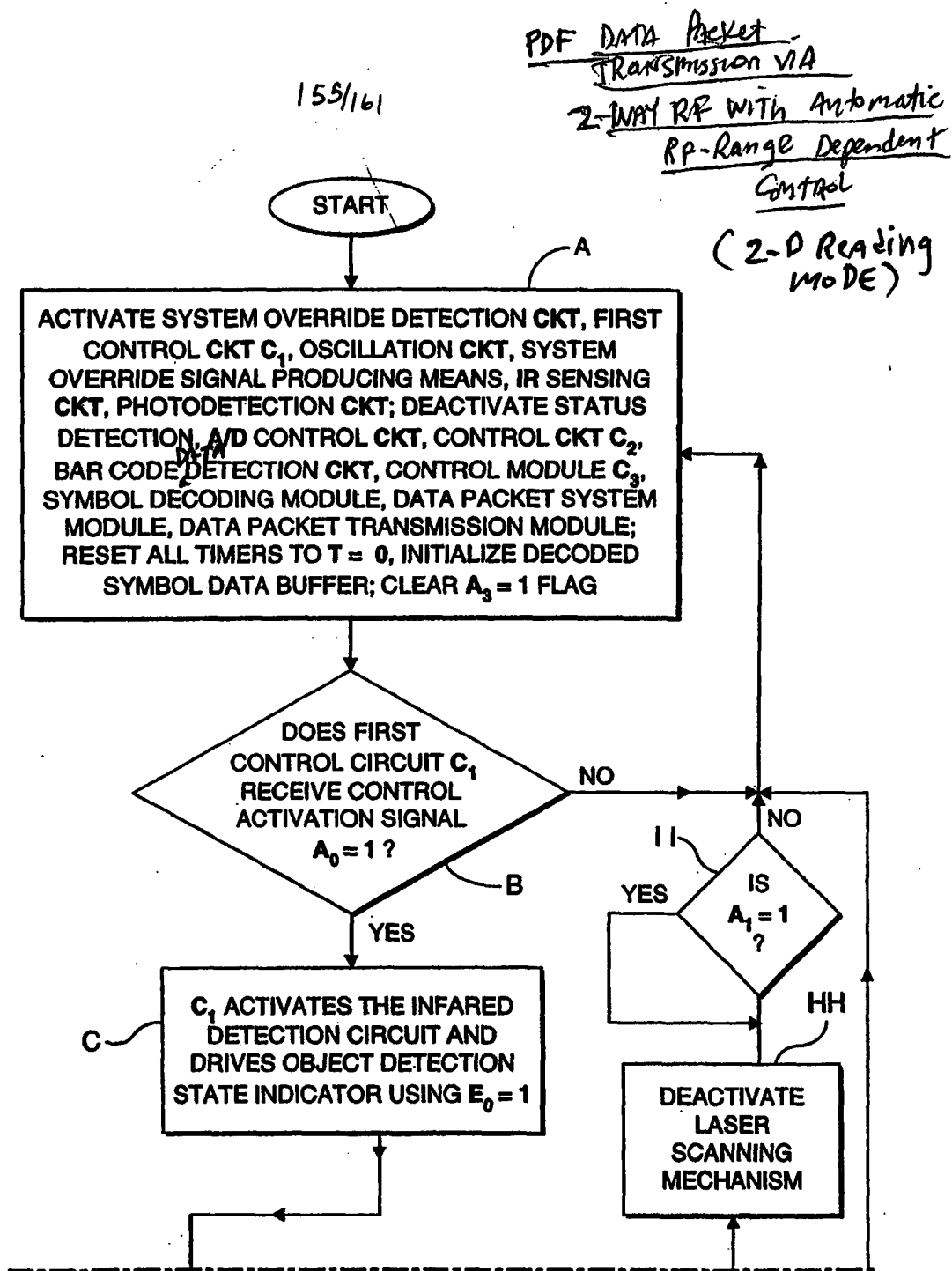
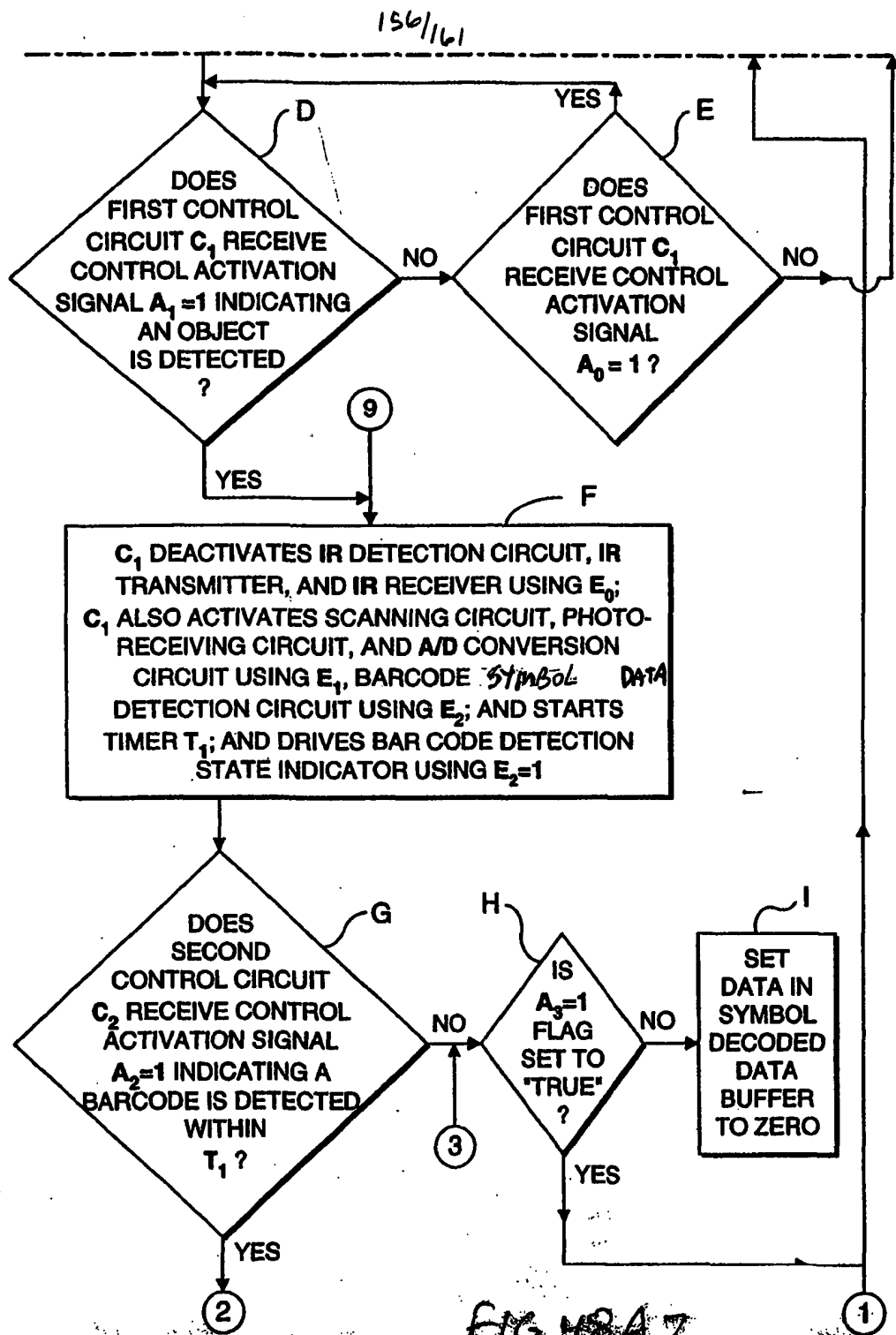
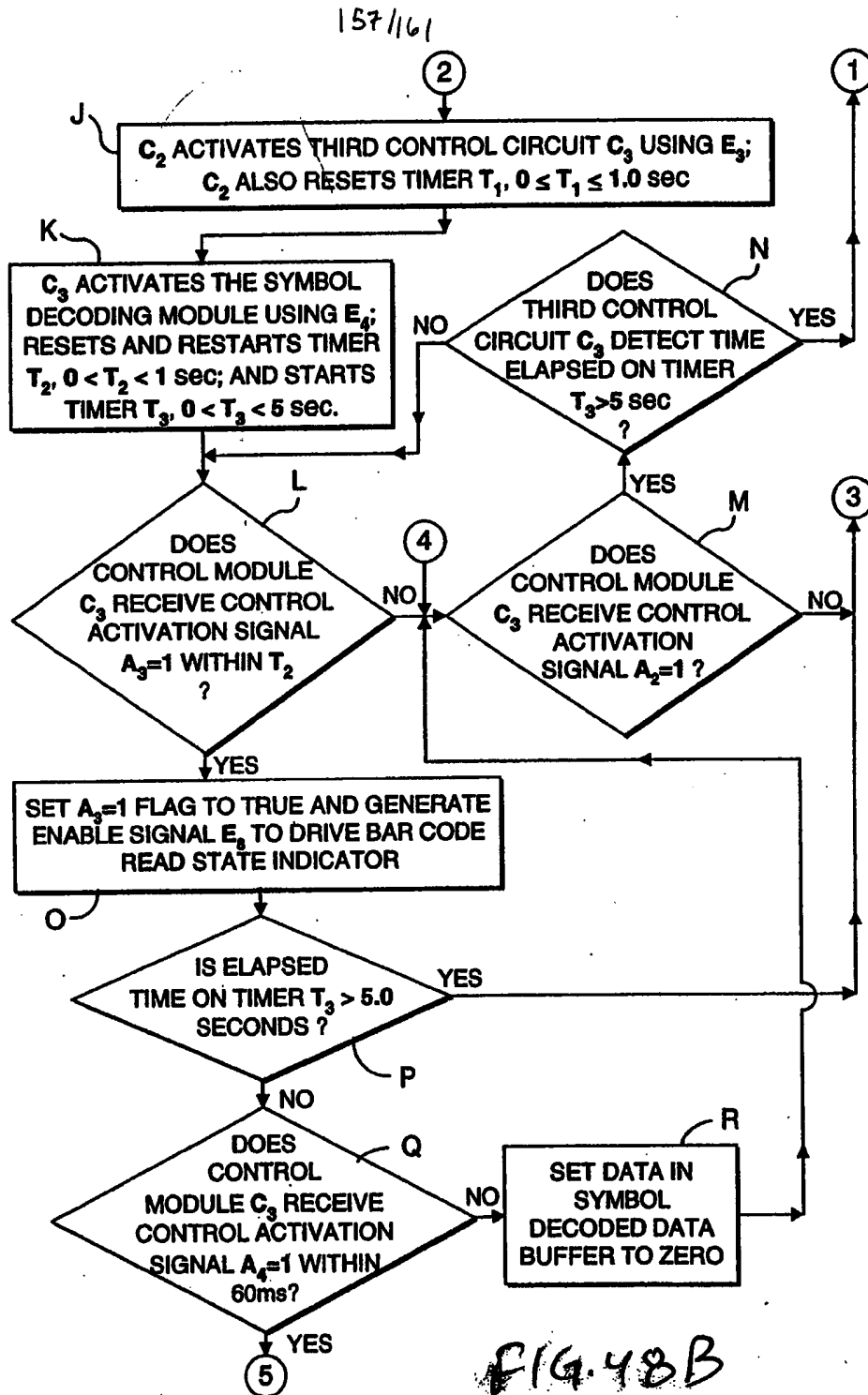


FIG. 48A1





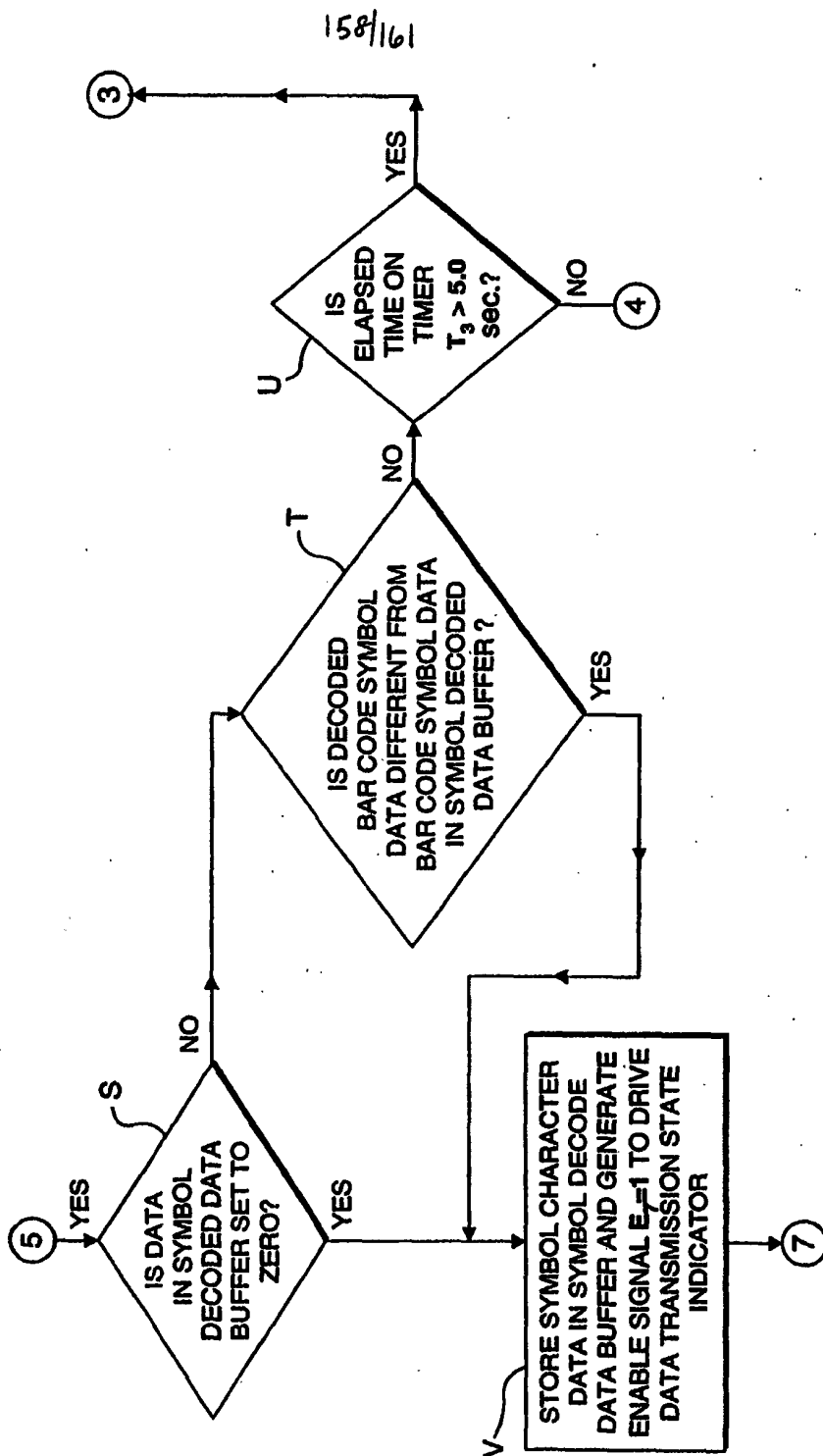


FIG. 48c1

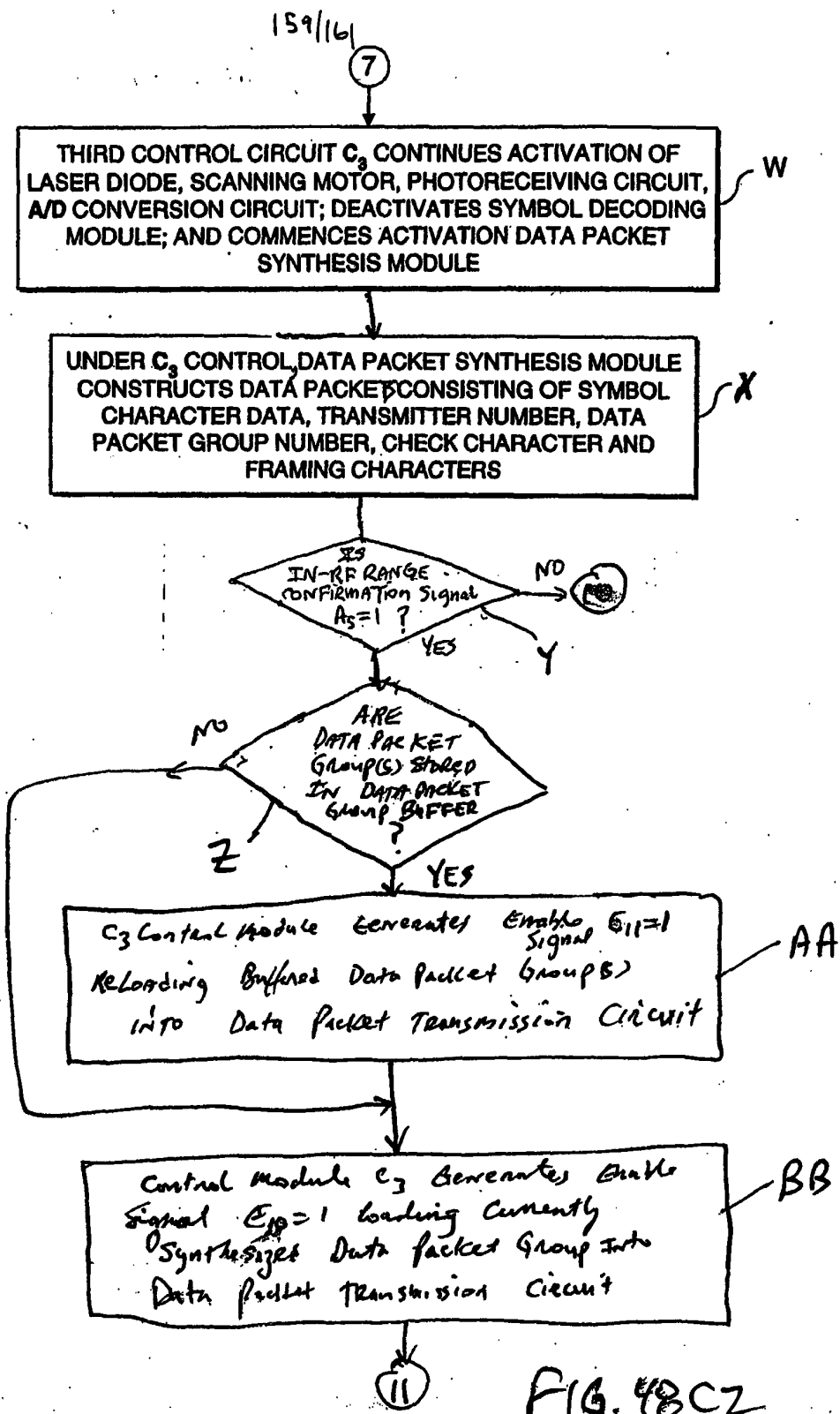


FIG. 48C2

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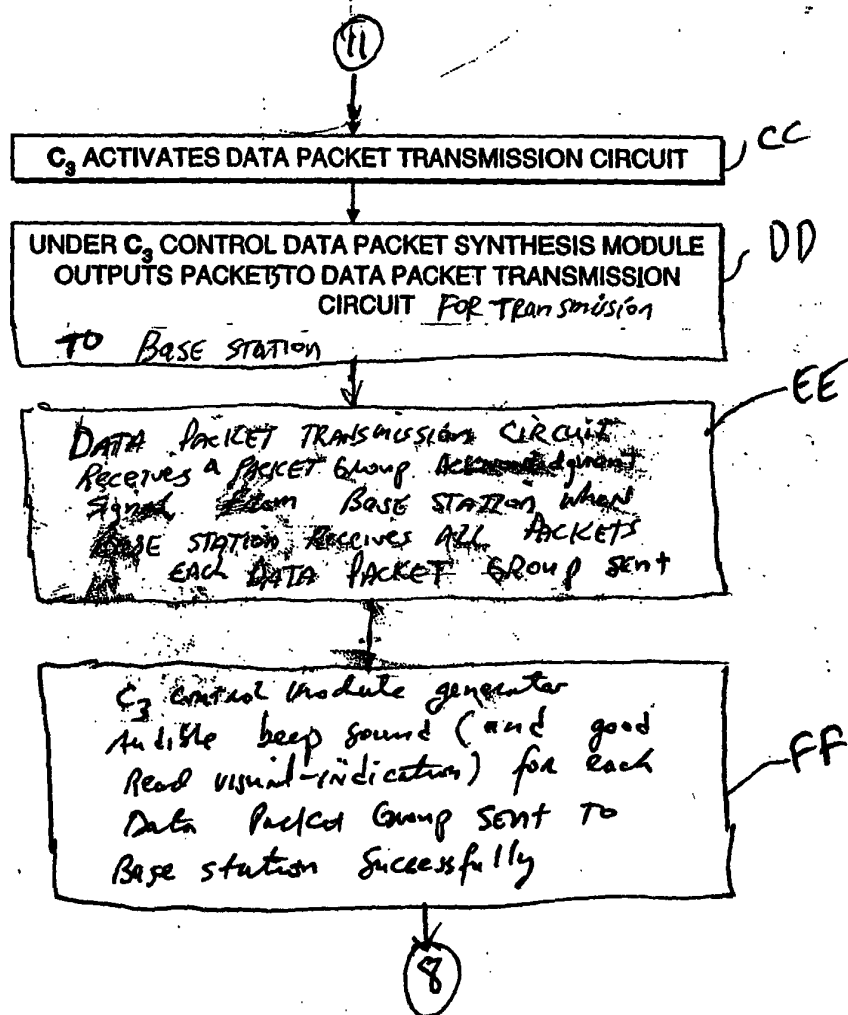


FIG. 48C3

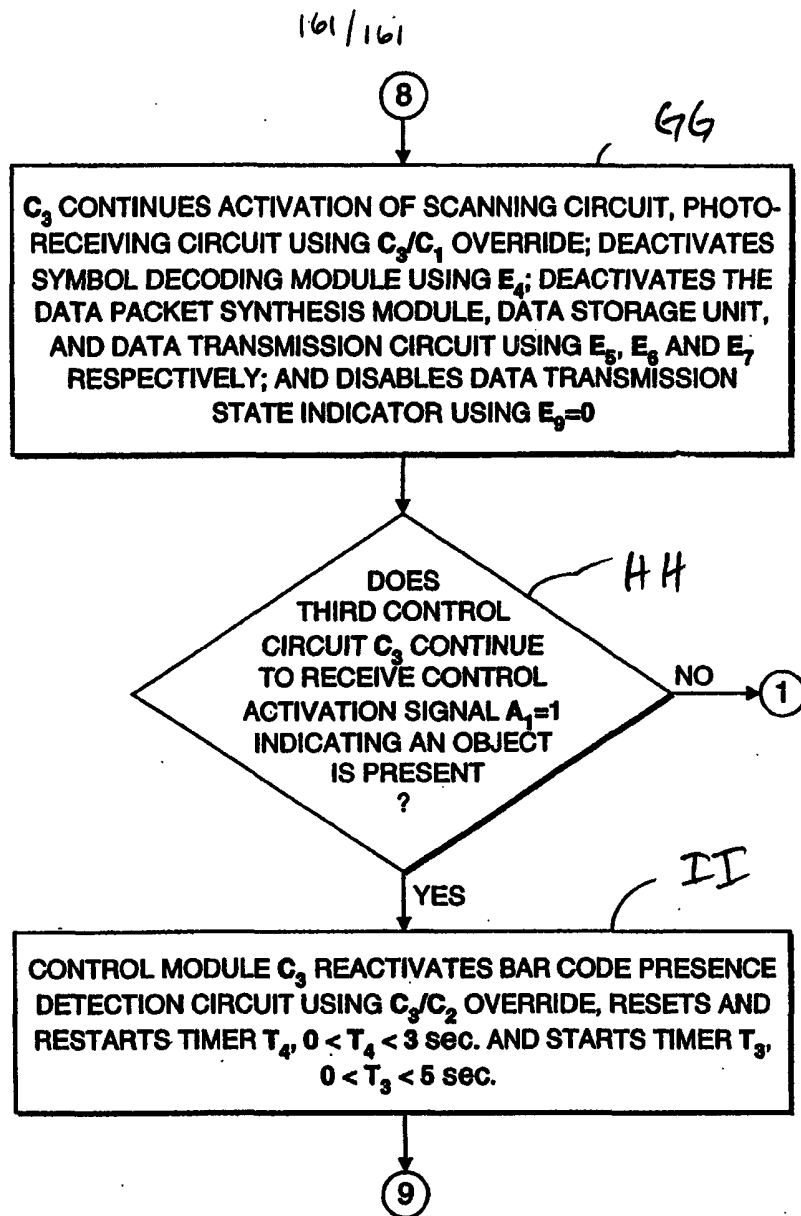


FIG. 48C4